# PULP & PAPER INDUSTRY
"The Cellulose Age"

The Management Journal Covering North America's Wood Pulp, Paper and Cellulose Industries.

May 1947 | Vol. 21 No. 6

Member Audit Bureau of Circulations



Miller Freeman.....President
Lawrence K. Smith.....Manager
Albert Wilson.....Editor
Miller Freeman, Jr.....Circulation Manager
Lucile Ayers.....Assistant Editor
W. E. Crosby.....Forestry Editor

**Publishing Office**

71 Columbia St,.....Seattle (4), Wash.
Tel. MA. 1626

**NEW YORK (17)**

Nard Jones.....Associate Editor
370 Lexington Ave. (120 East 41st St.)
Tel. Murray-Hill 3-9295

**NEW ORLEANS (12)**

Wm. J. Krebs.....Southern Editor
(1003 Baronne Bldg.)
305 Baronne St. .....Tel. Magnolia 4808

**VANCOUVER, B. C.**

Charles L. Shaw.....Canadian Editor
675 W. Hastings St.....Tel. Marine 1520

**OTHER OFFICES**

Louis Blackerby.....Portland 4, Ore.
534 S.W. 3rd Ave.....Tel. BE. 6348

Stuart Leete.....San Francisco 5, Calif.
121 2nd St.....Tel. GA. 5887

Arthur Ponsford.....Los Angeles 13, Calif.
124 W. 4th St.....Tel. MU. 8194



Contents Copyrighted 1947 by
Miller Freeman Publications, Inc.



**SUBSCRIPTION RATES**

United States.....$2.00
Canada .....$2.00
Other Countries.....$3.00
Single Copies.....$ .35
Review Number.....$1.00


# EDITORIALS

## From Wall St., You Won't See Much

ONE of the big New York investment houses recently published a gloomy prognosis for the pulp and paper industry. Reason given: Heavy capital investment.

This tale of woe has been seen by a number of prominent leaders in this industry and they called it to our attention.

There is a lot of expansion going on in this industry, but cautiously. It is almost entirely in kraft. The record shows that the kraft industry, in all its history of rapid, steady growth, has never caught up with the demand for its products.

We wonder if the analysts of doom looked very much into the tremendous development of new uses for paper—in pre-packaging of all kinds of goods, of frozen foods, etc. Or if they weighed the splendid record of peace and amity in this industry's labor relations.

Or, the fact that there are no huge inventories of paper, threatening to bog down the industry in a period of recession, or even depression, as there was in the gay twenties. In fact, there is virtually no such thing as a paper inventory.

And what about the big advertising programs, which industry leaders say have not even started. And the extending of consumer goods manufacturing all over the world, requiring paper for packaging on a tremendous scale.

Probably most important fact of all in favor of the pulp and paper industry is the real "action" program which this industry has been following for a long time to assure it a perpetual wood supply. Research scientists who have discovered ways to make paper out of Douglas fir in the West and hardwoods in the East have assured the futures of many mills. Hardly less important, is the increasing integration of this industry from the tree to the finished product, eliminating the need for several profits along the way.

But no Wall Street editor or analyst is going to know about these things unless he gets out in the field and sees them or hears about them. The editors of this magazine have traveled thousands of miles in Canada and the United States from Coast to Coast to find out that the paper industry is not an industry of doom.

## A Better Use of Alaska Timber

Nearly every expert in the field agrees that an adequate supply of high quality pulp at fair prices is going to be a critical future need for the United States paper and cellulose conversion industries.

Instead of using Alaska's excellent timber to make a million tons of low grade newsprint annually, why not use it to make 600,000 tons of quality sulfite pulp? This higher quality product would provide greater benefits for Alaskans, including the Indian labor, and greater ultimate benefits to a greater number of people in the United States.

## In This Issue—


New Georgia Mill ..... 20
Southern Kraft ..... 21
Chillicothe Paper Co. ..... 22
Towne Heads NPTA ..... 24
Frozen Foods ..... 24
Russian Expansion ..... 25
Powell River Barker ..... 26
Oregon Mill Sold ..... 34
Buys Swedish Mill ..... 36
Progress at Palatka ..... 36
Association Meetings ..... 38
Howard Anniversary ..... 40
Visit to Three Rivers..... 42
Crown Z Promotions ..... 46
pH Control (by Chandler)..... 52
Boyce's Predictions ..... 62

# NEGOTIATIONS FOR NEW KRAFT MILL IN SOUTHWESTERN GEORGIA

Utilization of a timber growing lease as the basis of pulpwood supply, with the operating company having exclusive purchase rights over a 40-year period, is an interesting departure in Southern forest practice in connection with the proposed erection at Bainbridge, Ga., of a pulp and paper mill.

The site of this mill would be part of the Bainbridge flying field, an Army installation transferred to Decatur County. Bainbridge, a town of 9,000, is in the southwest corner of Georgia, near the Alabama and Florida state lines.

Negotiations have been conducted by Leo L. Stack, president of Magnolia Timber & Development Corp. domiciled at New Orleans, La.

The basis for construction of the mill is a proposed lease of timberland aggregating 300,000 acres. On the basis of ¾ cords per acre annual growth and 1.7 cords per ton of pulp, this should yield approximately 132,000 tons per year. County commissioners adopted a resolution holding the field for the mill.

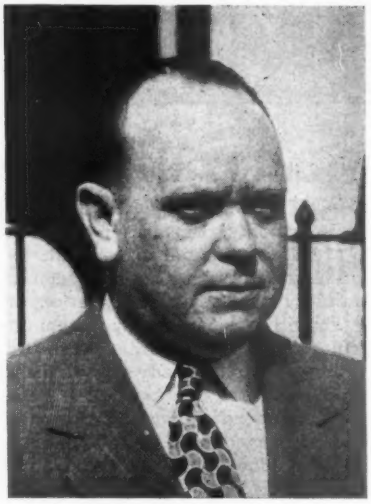
Under terms of the contract, forest landowners would receive 93¾ cents per acre per year as a timber rental based on an annual increment of ¾ of a cord.

In addition to rental, the owner would be paid a "fair market price" for pulpwood stumpage based upon Fisher's Index of Wholesale Commodity Prices with a current value of $2.50 per standard cord linked to 133.0 on the Index as of Aug. 31, 1946. Adjustment of price shall be made on fluctuations of 5% in the calendar year average, computed within 30 days from the close of the year.

Harvesting of pulpwood would be done only under the direction of experienced foresters, and not below requirements of the U. S. Forest Service.

Nominal limits for cutting would be from 4-inch to 10-inch diameter inside the bark, breast high (4½ feet), but with provision for improvement cuttings beyond these limits. Landowners may sell sawtimber, but subject to marking by company foresters and contractual logging provisions. Tops, etc., of saw timber so cut must be sold to the company as pulpwood at ¾ths the standard price.

Provisions for release of a maximum of 10% of forest land under lease when the owner desires to clear for agricultural activity are contingent upon the remaining forest land having sufficient increment over the ¾ cord per acre year to maintain the mill supply at the agreed figure.



**LEO L. STACK, President of Magnolia Timber & Development Co., of New Orleans, who has been conducting negotiations with county authorities for an air field site at Bainbridge, Georgia, for a new kraft pulp and paper mill. The basis for the mill would be an unusual 40-year lease with the landowners of a total of 300,000 acres.**

The customary provisions to maintain the lease in effect are provided, such as granting the company authority to apply rentals and other owner incomes from cutting against taxes, interest, debts, etc.

The landowner is called upon to prevent fires in the lands under lease.

All lands leased to the company are to be cruised and the annual increment estimated. Lands having less than the ¾ cord per acre year will be subject to negotiation for a scaled down annual rental.

The company's leases are extended to all forest landowners regardless of type or size, embracing farmer's woodlots as small as 13 acres and ranging up to 25,000 acres and more.

The pulpwood operations lease is marked by four distinct features: (1) it offers by annual rental incentive to landowners to protect their forest from fire; (2) it gives encouragement to tree growing by assurance of a market of known measurable quality; (3) it accepts the cutting practice standards of the U. S. Forest Service; and (4) it provides in some measure for sawmill timber production. An important feature is assurance of good forestry practice on lands of absentee landlords.




**SITE OF PROPOSED NEW PULP AND PAPER MILL at Bainbridge, in Southwest corner of Georgia. Bainbridge is a town of 9,000, which is 42 miles from Tallahassee, Fla., and 84 miles from Panama City, Fla. Nearest existing mills are the Southern Kraft mill at Panama City and St. Joe Paper Co. at Port St. Joe, Fla.**

### *Officials of Company*

Mr. Stack is a native of Leesville, La., and for many years was associated with the lumber industry in Louisiana, Texas and Arkansas. He said chartering of the company in Sept., 1946, came as the result of six years' preparatory work. Sam Houston Jones, former Louisiana governor, is company counsel.

Bainbridge is the county seat of Decatur County, located in southwest Georgia, in a good tree growing belt. It is on the navigable Flint River, having been a trading post founded 122 years ago. It was on the route of travel of Hernando De Soto and Ponce De Leon.

Bainbridge Field was a B-29 Army establishment during the war. The company plans to take 400 acres for mill and village site. The camp, for this purpose, has many attractive features. It has three 1,500 G.P.M. artesian wells; a 500,000-gallon elevated water tank; sanitary sewage system; a water system; 22 miles of improved roads. Camp buildings will accommodate construction forces and facilitate establishment of an attractive village. There is a housing project nearby.

# SOUTHERN KRAFT'S EXPANSION TOTALS $40,000,000 OUTLAY

A vast expansion program by the Southern Kraft Division of International Paper Co. over the three-year period which began in 1946 and carries through 1948 involves an expenditure of about $40,000,000.

For 1947-1948 the outlay approved by the board of directors is approximately $22,000,000 and will be spent for a new 150-ton paper machine at the Louisiana mill in Bastrop, La.; major changes in Camden, Ark., to step up production there by about 160 tons a day; various other mill improvements and the purchase of Southern timberlands.

One of the largest expenditures in 1946 was for the first all-hardwood pulp mill in the South, which started up last December 27 at Georgetown, S. C., and is credited with putting that mill—one of the biggest consumers of pulpwood in the entire world, if not just about the biggest—on a permanent basis for future operation.

A corrugated container plant, on which work was resumed in mid-1946 after being halted by the war, is now practically complete at Springhill, La., and is operating at 50% capacity. In a few months it will be on full operation, converting 60,000 tons of board annually into corrugated shipping containers.

An important trend in the entire pulp and paper industry toward more complete integration of operations from the tree to finished products is also exemplified by developments in the International Paper Co. It purchased Single Service Containers, Inc., which produces 16,800 tons annually of paper milk bottles at Philadelphia and Kalamazoo Mich., and the Scharff-Koken Manuf. Co., which produces 30,000 tons annually of shipping containers in St. Louis, within the past year.

Now it is planned to increase the output of Single Service Containers milk bottles by more than three times the Philadelphia and Kalamazoo production. This will be done by building a 54,000-ton-per-year (about 180 tons per day) plant at Bastrop, La., where two big Southern Kraft paper mills have rated capacity of 600 tons daily of sulfate and groundwood pulp and 240 tons of Chemfibre board and 280 tons of kraft paper and board.



MAJOR J. H. FRIEND, Vice Pres. and Gen. Mgr. of Southern Kraft Division of Int. Paper Co.

The new paper machine which will be installed at Bastrop (Louisiana mill) is officially rated at 43,550 tons capacity annually (nearly 150 tons daily). This will be the first new paper machine in the eight Southern kraft mills since the installation of the versatile Beloit all-purpose board and paper machine in the Georgetown mill which has the new dual couch arrangement with primary suction couch right after the suction boxes in the place usually occupied by guide roll. The arrangement is credited with sending a dryer sheet to the press and insuring safer operation. There were no details about the new Bastrop machine given out, but it is well known that all machines in the Southern kraft mills are Beloits.

The changes at the big Camden (Cullendale, Ark.) mill were not detailed, but it was understood that these were general improvements stepping up production by 48,575 tons per year (about 160 tons a day). This mill now has capacity of 330 tons daily of board, bag and sack and water-repellent and semi-bleached kraft specialties and 355 tons daily of kraft pulp.

### *Hardwood Mill Is Important*

One of the most interesting and significant developments in the South was the building of the hardwood pulp mill at Georgetown. This big mill is in a highly competitive area of the South for Southern pine. The use of hardwoods on a big scale will appreciably assure future production, employment and wealth for this area of the South.

One kraft board machine was converted to production of the Chemfibre product which is made from this hardwood pulp. This is a corrugating material used for containers. The total paper and board capacity at Georgetown was not increased. But supplementing use of pine by use of hardwood, entirely, in the new pulp mill will make it "easier to maintain full production." This was the way the IP company authorities officially stated the proposition.

Southern Kraft's Chemfibre pulp is partially cooked wood chips put through continuous refining.

Pulp capacity at Georgetown was formerly listed at 1,450 tons a day but unofficially it has been recently boosted several hundred tons.

Net expenditures for woodlands in 1946 by International Paper Co. is $3,464,411.

It was not necessary for the International Paper Co. directors to segregate funds for the Canadian subsidiary mills as the authorized capital expenditure in them was not expected to exceed depreciation reserves for 1947.

The main projects were in the South, where Major J. H. Friend is vice president and general manager and Erling Riis is vice president of operations and production, both with headquarters in Mobile, and Carley Crain, of Georgetown, is coordinator of operations of the various mills.

Total U. S. production of IP mills in 1946 was 1,767,579 tons as against 1,667,397. The bulk of this was unbleached kraft container board, 927,999 tons in 1946 and 874,163 in 1945. Groundwood specialties were increased 24,000 tons to 203,435.

An illuminating disclosure, indicating the trend toward integration, was that only 419 tons of kraft pulp were sold by the company last year as against 58,970 tons in 1945.

Canadian production, mostly newsprint, was increased from 821,371 tons to 904,024 in 1946. Dissolving pulps went up to 166,663 tons, an increase of 24,000.

Total sales for all IP mills were $287,867,668 in 1946, an increase of more than $53,000,000. Consolidated net profit for 1946 was $31,179,048 as against $8,546,078. Total payroll was $69,443,530 for 28,422 employes in 1946, increases of $11,400,000 and 5,008. Stockholders total 21,631.

## Improvements at Monroe, Mich., Mill

Consolidated Paper Co., Monroe, Mich., is improving its eight board and liner machines in line with many other companies in its field. Its Beloit and Black Clawson machines are going to produce higher quality products and the production will be slightly increased.

# Chillicothe Paper Company Installs Modern Equipment

A good and sound long-term customer demand for the book, offset specialty papers made by The Chillicothe Paper Company has justified the carefully-planned expansion program at that Ohio paper mill.

This was in the minds of directors when they authorized a new No. 3 paper machine, a modern power plant addition now virtually completed, and an additional finishing room already in operation, President Austin P. Story told PULP & PAPER Industry on a recent visit at the mill.

The new Rice, Barton 175-inch Fourdrinier is expected to step up production by 60% over present rated capacity of 70 tons per day, said Mr. Story, who is a native son of Chillicothe, Ohio, and an alumnus from "high above Cayuga's waters" as that fine old Cornell song goes.

E. F. Bearce, vice president and production manager, and a University of Maine man who has had a notable career in engineering in Canada and United States since leaving that University 42 years ago, said that finely balanced mechanical parts, modern speed controls and other automatic controls, non-corrosive stainless steel and alloys and a highly efficient and economic power set-up will be some of the outstanding and interesting features of the new equipment.

An all-day heavy snow was falling in the famous little paper mill town of Chillicothe when PULP & PAPER Industry made the visit there, recently, and just about 50 miles away in Columbus the sun was shining and the ground was dry. But don't jump to any conclusions—conditions might just as well have been reversed and they often are. We digress to the weather topic momentarily just to bring out that this part of the Scioto Valley is ruggedly individualistic, even to having its own weather.

At the time of this visit, the new 80,000-lb. capacity (650 lb. pressure and 750 degrees superheat) boiler was almost ready to fire up. The GE steam turbine of 4,000 kw at 4,160 volts, also used for drying and a small amount of heating, and other auxiliaries were being installed. The automatic Bailey meters were just being erected.

"Our spreader type of stoker will give us a wider range of possible



**AUSTIN P. STORY, President, The Chillicothe Paper Co., is a native of the Ohio city in which the mill is situated. He was formerly prominent in sales activities for The Mead Corp.**



**E. F. BEARCE, Vice President and Production Mgr. of The Chillicothe Paper Co., who heads up planning and direction of the expansion program of that mill. A University of Maine graduate, former power plant and mill construction engineer in Canada and later Chief Engineer of The Mead Corp., his background is highly valuable to his company in its present undertakings.**

types of coal," said Mr. Bearce. "This will be an advantage because there may be coals available in the future that will be less expensive than West Virginia coals—perhaps from Ohio. The increase in coal price justifies the expenditure to get increased efficiency in steam and power, which we will realize with our additional boiler and turbine."

For the two present Fourdriniers of 156 and 138 inches and other equipment the mill has had a power plant of only 2,000 kw capacity.

"While we were at it," added Mr. Bearce, "we have gone as far as we can in making use of central power plant control and other new facilities. One man could operate the new power plant from a single control board but we put two men on for safety."

### *Description of Equipment*

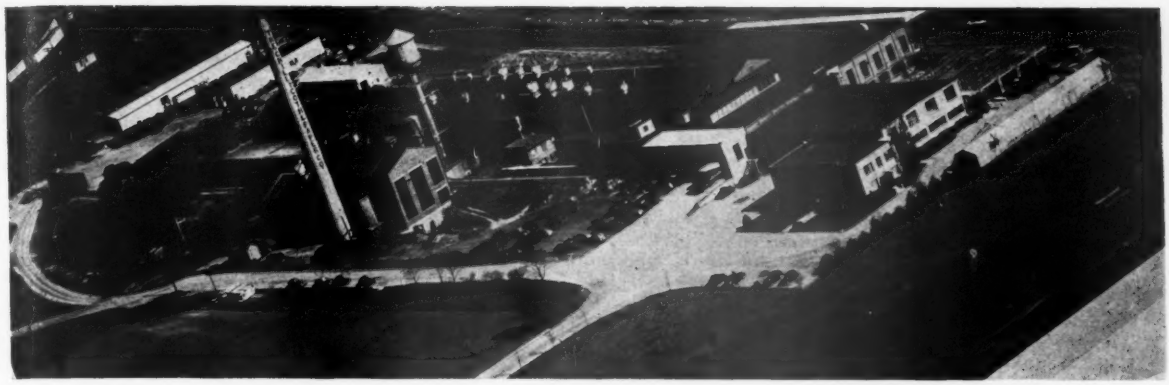
The new Rice, Barton machine will have a wire 175 inches by 70 feet long. A suction couch roll, suction press roll, 22 first section 60" dryers, a size press, 7 second section 60" dryers, two high-speed calender stacks supplied by Rice, Barton and Farrel, a uniform speed reel and Rice, Barton winder make up other major parts.

There will also be two new 3A type Bird Machine Co. screens equipped with stainless steel plates and Bird's system of Dirtecs units, Valley variable headbox and slice and Ross machine hood.

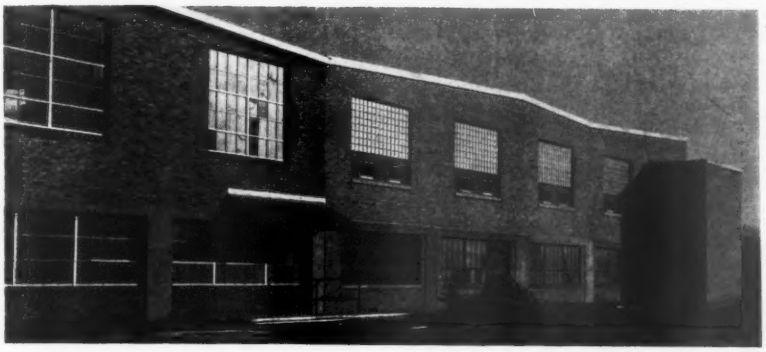
In the drive equipment for the paper machine, interesting use will be made of the Fawick Airflex clutches for more precise control between bevel gear units and intake shafts. A single variable speed, 350 hp., 250 volt GE motor connected to the center of a line shaft to spiral bevel gears through cone pulley provides the drive for the new machine. A continuous oiling system and hydraulic pressure for the calenders and presses are to be provided.

This machine will make book, writing, offset, sulfite bond and papeterie grades, substantially the same grades produced on the other machines. English finish, sized and super-calendered book and magazine paper are made at this mill.

For stock preparation, Kalamazoo Tank & Tile Co. is supplying beater and machine chests made with vitrified tile. Shartle Bros. is supplying stock pumps for the machine and beater chests and two No. 5 Miami jordans. Two 3,000-lb. beaters with stainless steel tubs from Bevis Machine Co. of Middletown, O., and a 3,000-lb. Midwest-Fulton breaker beater are other major units. Smith



**A LOW ALTITUDE AIR VIEW of The Chillicothe Paper Co. The new No. 3 machine room is back of the central main buildings shown here. Forms for the finishing room are visible at upper right corner. The completed finishing room is shown in another picture.**



**THE NEW FINISHING ROOM of Chillicothe Paper Co., now in operation, has various types of modern equipment, including paper decorating machines.**





**NEW MACHINE AND BEATER ROOM at Chillicothe Paper Co. as it looked in late March, inside and outside. Huge dryer rolls are seen at side of interior picture and foundations for the big new Rice, Barton machine are boarded off. The Austin Company of Cleveland carried out the construction work.**

agitators and Falk reducers for drives are supplied for chests.

The new finishing room, now in operation, has several units including paper decorating equipment.

Space for a No. 4 machine—whenever the company wishes to put one in—and for additional beater equipment is included in the new machine room. This space will be used for pulp storage.

The new machine room is 216 ft. long by 90 ft. wide. The beater room is 128 ft. long by 90 ft. wide, with main operating floor and basement. The power plant is 120 ft. long by 48 ft. wide, and is 80 ft. high over the coal bunker.

Ross Engineering Co. has designed the heating and ventilating system for the new buildings.

Sulfite, soda and sulfate pulps are purchased for this mill, mostly from the Pacific Coast, Canada and the South and very little from overseas. Some small amounts of fiber are reclaimed from waste paper but very little of this can be used. The quality of product from this mill calls for quality pulps.

Mr. Bearce stressed the point that modern and more efficient equipment is becoming increasingly necessary in the industry because of the 24-hour day, six-day week operation, as at Chillicothe, at highest possible efficient speeds.

"In these conditions, shutdowns are becoming more costly," he said.

Mr. Bearce is an active and interested member of TAPPI. He was born in Auburn, Maine. For ten years he engaged in the power plant and mill construction activities of Canada and Newfoundland and later became chief engineer for four years at the Mead mill which is located in Chillicothe, also.

In fact, Mr. Story, Mr. Bearce and others in The Chillicothe Paper

Co. were all Mead-trained men. The late Hector McVicker, who preceded Mr. Story as president of The Chillicothe Paper Co., was a former general manager of the big Mead mill.

His son, Russell McVicker, is purchasing agent of The Chillicothe Paper Co.

The general superintendent is F. L. Zellers, who is a past national president of the American Pulp & Paper Mill Superintendents Association.

Other Chillicothe company executives are A. I. Cahill, sales manager; W. A. Thomas, chief engineer; E. A. Hoey, traffic manager; and Charles Wright, chief chemist.

The mill is beautifully landscaped with a well-furnished and attractive office and is located well on the outskirts of the town. The big Mead mill is more in the main part of town.

There's some measure of business rivalry, of course, between the ambitious younger specialty firm and the big corporation, but on the beautiful golf links skirting the town and elsewhere, this is all forgotten.

## A. W. Towne Elected NPTA President

Recognition of the growing importance of papermaking and converting and paper marketing on the Pacific Coast was probably indirectly one of the background reason for the election of Arthur W. Towne of San Francisco as the new president of the National Paper Trade Association at its New York convention.

Mr. Towne is vice president of Blake, Moffitt and Towne, pioneer Pacific Coast paper distributors, and grandson of one of its founders. He was former vice president in charge of the NPTA's fine paper division.

## Robertson Advocates "Modest Curtailment"

"There seems to be very little prospect for substantially increased supplies of paper pulp coming to this country from Scandinavia in the next 12 months," President Reuben B. Robertson of Champion, also president of the APPA, told the National Paper Trade Association in New York Mar. 31.

"Eventually we will, of course, find the economic balance between demand and supply of paper and paper products, but for the coming year it looks as though that balance will come through somewhat lessened use, rather than through increased production," he said.

"Some one has said that the trouble with the publishing business is that 'too many people who have half a mind to write a book do.' You and I know that there are many books published that add little to the nation's fund of information or to its cultural progress. Maybe we can learn to dispense with a few of them."

Mr. Robertson proposed "temporary acceptance of a modest curtailment of use, rather than a further expansion of production in paper, as better for all concerned, the paper producer, the merchant, the consumer alike."

"Installation of more machines will not of itself help unless at the same time more pulp is made available," he said, adding: "More virgin pulp cannot be made until suitable forest areas can be found and mills built in those areas. Forest areas suitable for pulp mill use are few and far between in continental United States and those that remain unutilized involve high operating costs."

# 90 PER CENT OF ALL RETAIL FOODS WILL BE PRE-PACKAGED

"It is safe to say that within a very few years 90% of all retail food sales will be made through self-service methods—which means that fresh fruit and vegetables must be as accessible to consumers as hundreds of competing food products."

Thus predicted A. L. Martin, director of research of the Western Growers Association, at the 16th annual Packaging Exposition held at Convention Hall, Philadelphia, Apr. 8-11.

And the answer, said he: *Prepackaging.*

He pointed out that through prepackaging such operations as weighing, counting, assembling, fitting, cutting pouring, will be ruled out of the retail store. He called attention to pre-packaging as a solution to higher store operating costs. Average annual sales of a retail food store employe in a counter-service store is $15,500. In self-service, prepackaged stores it is $20,500—an increase of 32%.



**ARTHUR W. TOWNE, Vice Pres. and Mgr. of Blake, Moffitt & Towne, San Francisco, who was elected President of National Paper Trade Association in recent national convention in New York.**

One enthusiastic source at the Packaging Exposition told PULP & PAPER that he felt that the serving of this "nek" industry (prepackaged fresh fruits and vegetables) might alone hold paper production to its present tonnage, and eventually account for further expansion. For it was obvious at the Packaging Exposition that the fruit and produce people are out to compete with frozen foods and other edibles on their own terms.

While paper exhibitors at the annual Packaging Exposition are relatively few (because many mills leave this spotlight to the converter) it was plain that paper and paperboard were king and queen of the big show. By far the greatest majority of exhibits either featured packaging of paper, paperboard, laminates or transparencies of various types, or were devoted to machinery and supplies for the creation of such packages or the packaging of products in them.

The place of paper in the annual exposition is also revealed by the names of some of the personnel of the show. The exhibitors' advisory committee of the exposition included Frank A. Biederman, advertising and promotion manager of Kimberly-Clark; H. H. Jones, second vice-president and manager of sales promotion for KVP; Paul Meelfeld, advertising and sales promotion manager of The Hinde & Dauch Paper Co.; and Paul Thompson, advertising and sales promotion manager of Sherman Paper Products Corp. The Packaging Conference planning council includes W. H. Graebner, of Marathon Corp., and F. L. Triggs, of Riegel Paper Corp.

J. H. Macleod, vice president of the sales division of Hinde & Dauch, was chairman of the April 9th session, and J. D. Malcomson, director of products development for Robert Gair Co., represented fiber containers on the panel discussion of shipping containers that afternoon.

Among the exhibitors from the paper industry or well known to it were: Container Corp. of America, Dow Chemical Co., E. I. du Pont de Nemours & Co., Eastman Kodak, Gaylord Container Corp., The Hinde & Dauch Paper Co., Kalamazoo Vegetable Parchment Co., Kimberly-Clark Corp., Marathon Corp., Nashua Gummed and Coated Paper Co., Riegel Paper Corp., Sylvania, Union Bag & Paper Corp., and United Paperboard Co., Inc.

# Russia Plans Big Expansion Of Paper and Wood Production

Soviet Russia's timber cutting will be increased considerably under Stalin's new Five Year Plan and will reach daily production of 276,000 cords.

(Eds. note—This would amount to nearly 83,000,000 cords for a 300-day working year. The United States timber cut is currently at 35 billion feet annually which would be equivalent to about 70,000,000 cords of which about 15,000,000 cords are in pulpwood.)

The Five Year Plan envisages "revolutionary" mechanization of wood production. Already 200,000 woods workers in Soviet Russia are using power saws.

During 1946, 44 small guage railroads were built into timberlands. The Five Year Plan calls for 155 more narrow guage and 7 wide guage railroads, 205 logging truck roads and 133 tractor ways.

A new tractor has been designed to haul timber from the woods. Two thousand logging trains and 12,000 tractors are to be provided.

Much "time and effort" were expended by Russia in 1946 developing new uses for wood and an engineer, O. F. Kaplur, is credited with "a valuable discovery"—a new building material made in a high pressure machine which will replace metal in planes, ships and automobiles.

In the Leningrad area, during the war, one woods worker has increased average daily output from 2½ cords a day to 3¾ cords. In other districts the increase was to 3 cords.

The above "bullish" forecast on Soviet timber industries and report on present accomplishments was made by the Soviet Commissar of Forest Industries, M. I. Saltykov, in an article for the Russian magazine Ogonjek. This information was later printed in the official mouthpiece, Pravda.

This is one of the most detailed and interesting reports to come out of Russia on forest resources and uses, but unfortunately there is no breakdown available to indicate the pulpwood statistics or possible future statistics.

While the article states the Soviet forests were heavily damaged, the Commissar made this optimistic survey:

"The Soviet Union's forest resources are inexhaustible and are without doubt the world's greatest. These resources cover an area of over 1 billion hectares (one hectare-2,471 acres; 640 acres-1 sq. mile) or nearly two-thirds of the U.S.S.R.'s entire territory, or about one-third of the world's entire forest area. (On the basis of FAO's recent report 'Forestry and Forest Products' the Soviet Union's forest area is 960 million hectares of the world's 3,650 million hectares, inclusive of leafy woods and tropical woods). Existing timber in the Soviet forests is measured at approximately 12,500,-000 cords. Of this quantity about 80% is of the species that can be readily utilized in modern industry. The Soviet Union has therefore at its disposal the most valuable part of the world's forest resources.

"But demand for wood and wood products grows daily by leaps and bounds, and this is especially true in Russia, which covers one-sixth of the world's land area, Wood products are being utilized today for the reconstruction of the cities and industrial areas which were destroyed during the war.

"Spruce has become an indispensable commodity in the paper and wood pulp industries. Spruce is also used in the manufacture of rayon thread. Further, spruce is consumed in large quantities by the aircraft industries. Airplane bodies of spruce plywood, baked in one piece, are a Russian specialty. Pine is used for coarse paper and birch for valuable plywood.

"Wood has also become increasingly important in the chemical industry. Alcohol, aspirin, turpentine, creosote, artificial wadding, colors, varnish and acetic acid are made from wood. The chemical utilization of pine gives us soap, oils, etc. The plants which make artificial rubber use alcohol made from wood pulp, as a principal raw material. In recent years the manufacture of rayon silks and cellulose wool has made tremendous advances.

"Under the Five Year Plan timber cutting shall be increased considerably and it is estimated that in the near future cutting will reach a daily production of one million cubic meters. Just prior to the war 4,000 tractors, 6,000 trucks, 210 locomotives, 125 motor trains and a great deal of other equipment were used in the lumber industry. The war caused great damage to our forest resources."

## Russia's 4-Page Paper Wants to Grow

Complaints about the newsprint shortage by publishers in the U. S., Britain and France are echoed in Russia, too.

Pravda is limited to four pages in each edition and on one day a week—Monday— it is the only newspaper published in the Soviet capital, a New York Times correspondent reports. Other days its competitor is Isvestia and there are other special newspapers such as Red Star (Army organ), Red Fleet and Sport.

Pravda's newsprint comes largely from Balachna, on the Upper Volga River.

Although only four pages, Pravda has a huge circulation—3,500,000—and is printed in ten Russian cities, mats of the four pages being flown to plants in Leningrad, Kiev, Rostov and other cities.

Pravda editors said their ambition is to publish as large a newspaper as the New York Times (80-100 pages on Sundays) but they will need new plants to do so.

## L'Honnedieu Heads Personal Products

Paige L'Honnedieu, who has been with Johnson & Johnson for 28 years, has been named president of its subsidiary, Personal Products Corp., of Milltown, N. J.



**PAIGE L'HONNEDIEU, new President of Personal Products Corp., of Milltown, N. J., which makes cellulose products for Johnson & Johnson, pharmaceutical manufacturers and parent firm. He succeeds John A. Underwood, who supervised construction and start-up of the new Milltown mill which was described and illustrated in a recent issue of PULP & PAPER Industry.**

# Canada's First Hydraulic Barker Key Unit in $1,800,000 Wood Plant

Capitalizing on the experience of its predecessors in the same field, Powell River Co., one of Canada's biggest and most progressive operators in the pulp and paper field, has installed a hydraulic barker as part of its new $1,800,000 wood-handling system.

The big new barker, first of its kind to be built in the British commonwealth, went into operation late in December when President Harold S. Foley of Powell River Co., manipulated the levers that set the machinery in motion.

The whole of the company's modernized wood handling setup will probably not be in full operation until early in the summer, but rapid progress is being made in construction of the various units included in Powell River's extensive program for improving and increasing production with fullest possible wood utilization.

Actually, Powell River Co. will have two hydraulic barkers, the larger one—already in use—for standard size logs and the other for barking logs in 4- or 8-foot lengths, from 4 to 18 inches in diameter. The chipper mill is also being completely reorganized with the installation of important new equipment.

Engineers of the Powell River Co. staff had been studying the hydraulic barkers and other phases of wood utilization in the Pacific Northwest for several years. They observed that at some mills where hydraulic barkers were installed the saving in wood was as high as 20% as compared with conventional methods such as barking with drum or knife and chipping of short blocks or sawn cants with the smaller type of chipper. At Powell River, however, the saving is not expected to be quite so high. For sulfite pulp a log saving of 14% is anticipated, while for groundwood this may be as little as 9%.

## Our Cover Picture—

. . . is a new air photo taken of Powell River on the Strait of Georgia, which is one of the greatest sportsmen's waterways in North America, separating British Columbia proper from Vancouver Island. Powell River is on the mainland side.

This new picture was taken March 22. As explained on the cover, the new hydraulic log barking and whole log chipping plant is in the new building on the water side, with two log hauls leading from the log booms in the lower right foreground of the picture. Here is the sawmill, too.

Back of this building are the No. 5, 6 and 7 newsprint machine rooms. Off to the right, by itself, is the new groundwood mill. To the rear of the wharf and to the left are the sulfite digester house, Kamyr machine building, additional newsprint machine rooms, the old groundwood mill and other structures.

Behind the mill buildings are the business center and some of the residential area.

The inland body of water at upper left, is a section of 30 mile-long Powell Lake with the Powell Lake dam, source of about half the power that drives Powell River Co's turbines, additional power coming from Lois river to the south. About 3,000 people live in Powell River, practically all of them directly dependent on the pulp and paper industry that has flourished there for the past 35 years.

In construction of the big barker at Powell River, of the Weyerhaeuser type, the following companies were chief suppliers: Filer & Stowell Co. of Milwaukee, steam shotgun feed and carriage assembly for hydraulic barker; Canadian Controllers, Ltd., associated with the Clark Controller Co. of Cleveland, all electrical controls for the barker; Canadian Sumner Iron Works of Vancouver, B. C. 67 gear reducers ranging in capacity from 2 to 50 k.p., all lok kickers, loaders and air-controlled log cut-off saw frame for 108-inch diameter saw; Electric Steel Foundry Co. of Portland, Ore. (Esco Ltd. in Canada), all cast manganese log haul and log conveyor chains together with necessary sprockets, drums, etc., for the log conveyor drives; Northern Foundry & Machine Co., main barker pumps; Harland Engineering Co., Alloa, Scotland, booster barker pumps; Waterous, Ltd., chipper; Orville-Simpson Co., chip screens; Western Bridge & Steel Fabricators, Ltd., detailing, supplying and erecting all steelwork for buildings and equipment.

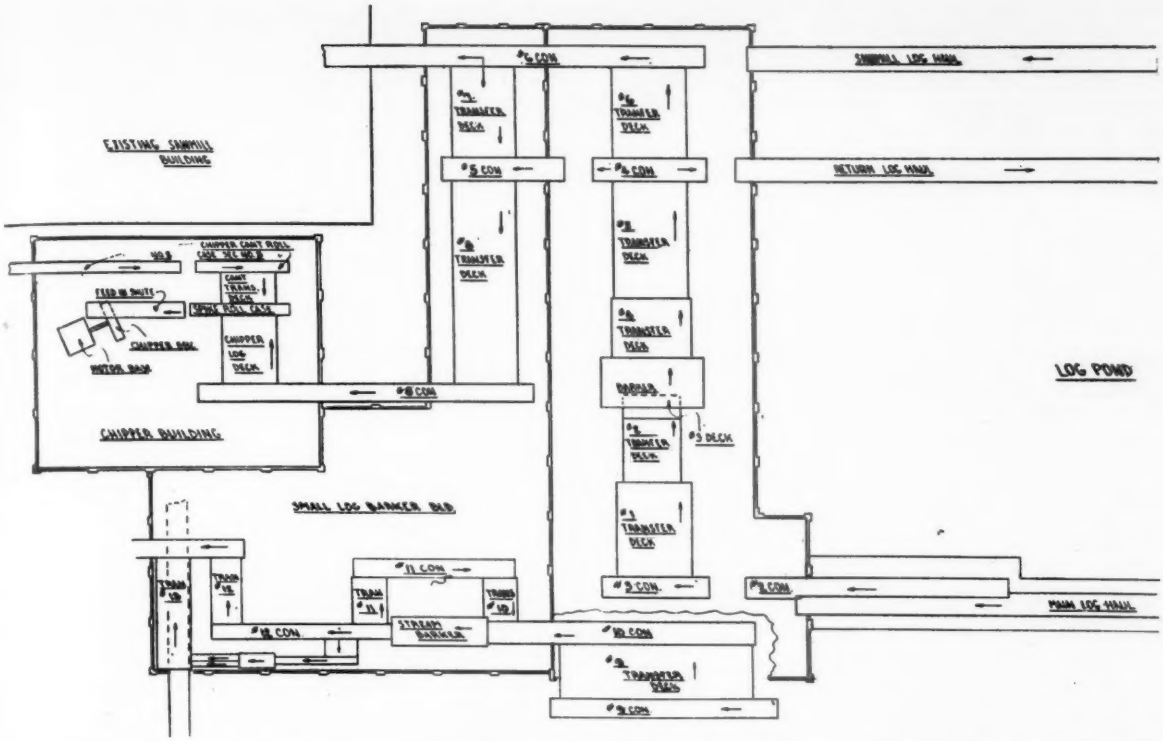
### *Important Savings*

At the Powell River mill, where about one-third to one-half of the logs that are barked are to be used for chips and the remainder used for groundwood blocks, it is expected that an overall saving of about 10 to 12% of the logs normally required for this output will be effected.

When at peak production the Powell River sulfite mill produces 230 tons A.D. of sulfite every 24 hours for newsprint and sales. When the logs are to be barked by the old methods, the mill needs about 235,000 ft. British Columbia log scale every 24 hours. After the two hydraulic barkers and the whole log chipper have been put into operation this figure will be reduced to about 200,000 ft. log scale of unbarked logs (equivalent to 400 cords). This

**THIS 30-INCH LOG WAS FIRST PIECE OF TIMBER put through Powell River Co.'s new hydraulic barker. Company officials pictured standing on log are (from top left reverse clock-wise) Robin Bell-Irving, Vice President; Ben R. Cancell, Vice President; William Barclay, Vice President (Powell River Sales Co.); George O'Brien, Vice President, and Harold S. Foley, President.**






**FLOW PLAN OF NEW HYDRAULIC LOG BARKING AND CHIPPING PLANTS AT POWELL RIVER CO., POWELL RIVER, B. C. This shows decks and conveyors. Big log barker is just about in the center. Note, smallwood barker building at left foreground. Chipper building at left center and existing sawmill at upper left.**

represents a saving every 24 hours of about 35,000 ft. log scale, or 14%.

The company's present 24-hour requirements for both sulfite and mechanical pulp approximates 545,000 ft. With the new barking and chipping facilities this figure, it is hoped, will be no more than 480,000 ft., representing a saving of 65,000 ft. every 24 hours, or 1,700,000 ft. per 26-day month. This represents more than three days' additional available log supply per month.

The larger hydraulic barker installed at Powell River is similar to the one designed by the pulp division of Weyerhaeuser Timber Co. at Longview, Wash., an improvement over that company's first installed at Everett, Wash., four years ago. PULP & PAPER INDUSTRY, in the Dec., 1946, issue described the newer Weyerhaeuser hydraulic barker at Longview.

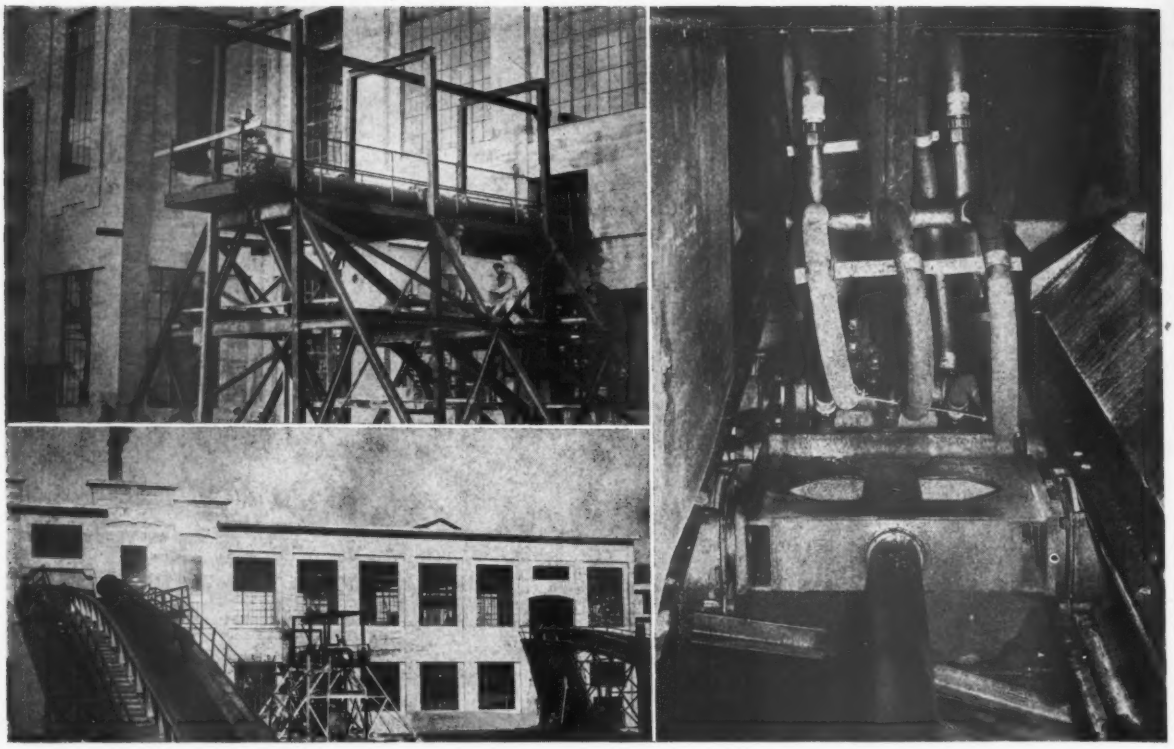
Logs now arriving at Powell River may vary from five inches to eight or nine fieet in diameter and from 12 to 75 feet in length. These logs may be sound or split or somewhat decayed with poor ends. They may be hard or easy barking. The type of barker selected had to be capable of handling these different kinds of logs.

Before the new wood handling setup was adopted at Powell River the logs were brought from the salt water log pond and cut into cants and then into blocks, after which the blocks traveled by conveyor about 500 feet to the barker mill. In this mill they were barked in any of four dry barking drums and then washed in either of two wet drums. Then they went to the groundwood mill or to chippers, depending on species of the wood. If the blocks required no barking they might by-pass the drums and go direct to the chippers or the groundwood mill. After chipping, the chips were screened by four primary and two secondary outdated shaker type screens, and from these the accepted chips went to the digester bins or to storage. The rejects or overs went to the chip breaker and thence to secondary screens. Rejects from these secondary screens and sawdust went to the hog fuel system.

The new layout, basically, calls for the hauling of unbarked logs from the water, barking and then sending them directly to a chipper, to the sawmill carriages for lumber and groundwood blocks or returning them to the water to be stored in small easily-handled booms. These logs in the storage booms will be returned as required to the chipper or to the sawmill, or perhaps be sent to any other processing plant that may be installed along the Powell River waterfront in future.

An accurate knowledge of the species of wood being processed results in close control over the quality of groundwood and sulfite pulp. The species now being turned into pulp at Powell River are hemlock, spruce and balsam. Under the new system it is planned to send logs unsorted as to species to the hydraulic barkers. On the decks just ahead of the barkers each log will be marked according to species and then, after barking, if it is of a species required by the new chipper or by the existing sawmill it will be sent to either of these two mills. If the decks of these two mills are full at this particular time, or if the log is of a species which is not then being processed it will be sent back to the water

The barkers will probably operate 16 hours a day in order to enable them to bark the necessary number of logs required for the daily operation of the pulp mill, but the chipper will be able to produce the daily chip requirements in one eight-hour shift and the existing sawmill its groundwood block requirements in two eight-hour shifts or less. This makes it essential that an area be



**A "SENSATIONAL" FEATURE OF THE NEW WEYERHAEUSER TYPE LOG BARKER, as installed at Powell River and also at the Weyerhaeuser mill in Longview, Wash., is the Filer & Stowell Free Piston Engine. This is a shotgun type of steam cylinder which drives the nozzle carriage back and forth underneath the log at maximum velocity of 40 ft. per second.**

**The huge piston, which swings up to a 31 ft., 6 in. stroke, according to log length, never fails to give the "layman observer" a thrill. The "sensational" feature is the speed with which it reverses direction—so quickly that the nozzle carriage is traveling full speed again when it meets next log. Huge logs up to 26 ft. in length are barked in one-half to two-thirds of a minute.**

**Above are three available views of this Filer & Stowell engine—much of it now under housing.**

**Upper left—Outside view of assembly and steel work during construction. The engine is underneath the second or operating floor and partly outside the building, so the nozzle runs under the log.**

**Lower left—Shows the outside assembly in relation to the two log hauls on each side of it. Electric Steel Foundry Co. built the new 230-in. all-steel log haul, at left, providing special chain, etc., and Canadian Sumner Iron Works provided drive mechanism.**

**Right—Close-up of carriage or "wobble stick" which travels on wheels. Part of piston can be seen in the foreground.**

**The visual operation may be "sensational" to the uninitiated. What is really "sensational" to mill executives and engineers is that this Filer & Stowell engine not only barks logs much faster than the twin engine drive used on the first Weyerhaeuser barker at Everett, Wash., but does it with very low steam consumption.**

provided to store logs barked during the chipper and sawmill off-periods. As at least 200,000 feet of logs (equivalent to 400 cords) should be provided for, it was necessary to have a water storage basin, with storage capacity in addition for the groundwood blocks and sulfite chips.

### *Conveying and Handling*

Electric Steel Foundry Co. built for Powell River Co. an all-steel log haul which, like the Weyerhaeuser unit at Longview, is one of the first of its kind in the industry. Driving mechanism for the log haul was provided by Canadian Sumner Iron Works, which also installed the 108" cut-off saw, log-locking jaws and practically all the units on the log deck such as the log loaders, unloaders and kickers with solenoid controls, as well as the electric gear reduction sets for the drive.

The all-steel log haul has a horizontal length about 230 feet from the tail idler in the water to the head drum. The entire structure is carried out over the water on creosoted piles capped with concrete beams. The eight-inch pitch chain is driven at 120 ft. per min. by an open gearing drive from a 150-h.p. wound rotor induction motor, carried on pivotal motor base. The motor can be run at four pre-selected speeds and all that is required of the operator is for him to push one of four start buttons and the equipment automatically comes up to the selected speed. This prevents any abuse by an operator and also helps to free this man for other duties such as the scaling of the entering logs.

For 60 feet out from the face of the building the horizontal section of the main log haul is paralleled by another conveyor whose purpose is to receive the logs as they are kicked sideways out of the main log haul by a Sumner five-arm steam log kicker. At the head of this conveyor are located a 108-inch cut-off saw and an electric drag saw. These two saws will be in almost constant use, as most of the logs entering the mill will be more than 26 feet in length, the maximum length that can be handled by the barker.

Log booms are hauled in toward the log haul as required by means of two steam winches set on a small pile and concrete wharf above the lower end of the log haul. These winches allow three booms at a time to supply logs to the mill, and they also permit removal of swifters and the turning of large logs for a better fit into the log haul trough.

The logs pass from the saws to another conveyor on one side of which are arranged five light units

at intervals of 32 inches to beam across the conveyor trough into photo electric cells, which are connected to relays in such a way that they will stop the conveyor drive the moment any one of these light beams that may be selected by the operator is intercepted by the forward end of a log. The forward end of each log is thus stopped beyond the two cutoff saws a distance which is a multiple of a 32-inch groundwood block. Thus, when the logs are cut by the slashers in the sawmill, there should be no short blocks from this part of the log. The other part of the log may, of course, not be a multiple of 32 inches and therefore may create a short block when slashed, but there are other provisions in the sawmill for overcoming this situation. The logs are held for cutting by an original design of log vse, consisting simply of a toothed cast seel frame which lifts the log from the log haul trough and prevents it from moving sideways and binding the saw as it is being cut.

When logs are kicked out of the No. 3 conveyor they are stored on a two-section storage deck just ahead of the Weyerhaeuser type barker. The first section is horizontal while the second section is slightly inclined and with a separate drive. At the bottom end of this second section of deck a conventional log loader and stop are installed. The transfer decks consist of several strands of 132 type chain, each carried on a double 18-inch structural channel beam.

The chains pass around idler wheels at the tail and the head ends of the deck beams then around the sprockets under each of these beams. The drive sprockets are driven from a squirrel cage induction motor through a cenrtifugal coupling and gear reduction unit, an arrangement standard with Weyerhaeuser barkers.

### *Barking Operation*

The barker itself consists of an arrangement of structural columns and beams which support the actual barking machinery and which are sheeted on the sides and on the top by steel plates to restrain the water spray and flying bark. The steel plate housing covers a plant area of about 22 by 29 feet, roughly 20 feet high. Just below the barking housing are two refuse conveyors to remove the bark and other material stripped from the logs, and to discharge it into conveyors going to the existing hog fuel system. In one of the side walls of the barker housing somewhat above the log deck level an observation window is located and here the operator watches while controlling the barking.

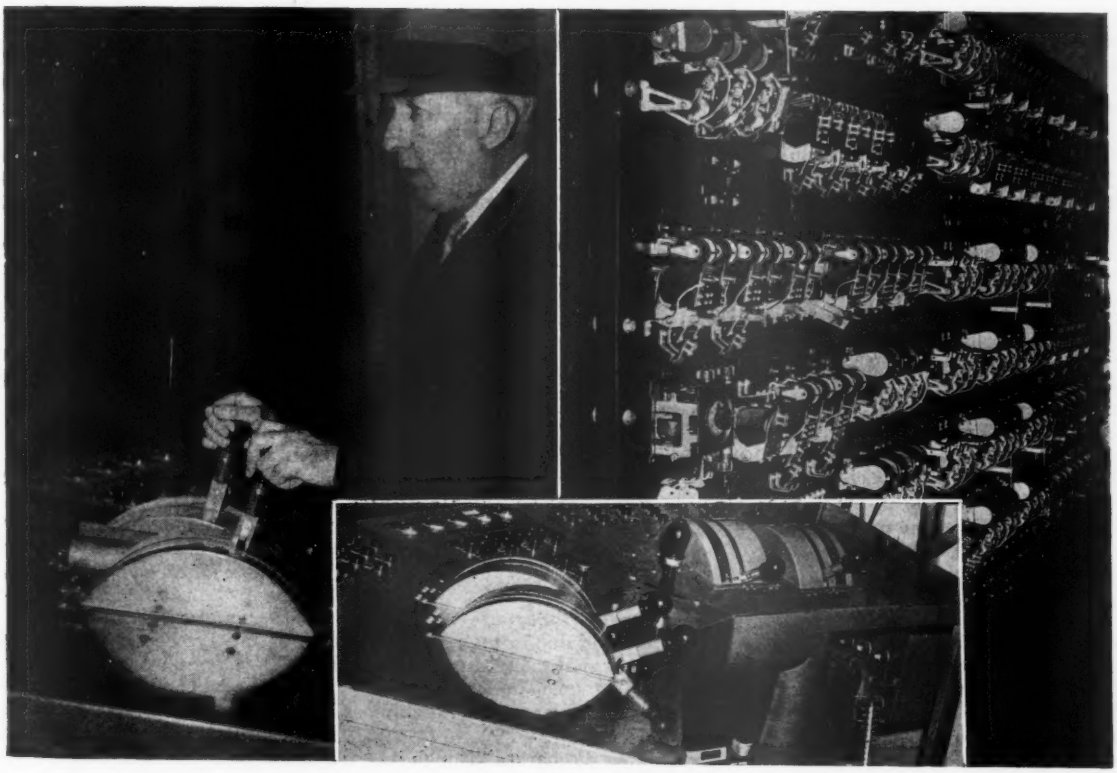
All barking operations from the storage level on the entry side of the barker to the spudding deck are under the control of this operator who is seated at a specially designed

**AT LEFT, PRESIDENT FOLEY OF POWELL RIVER CO.** tries his hand at operating the new big log hydraulic barker. Sixteen log de-barking operations are under instant operator's control at this "3 C" bench board which is part of the unique equipment developed during the past three years by The Clark Controller Co. of Cleveland. Mr. Foley watches the operation through heavy shatter-proof glass.

Below center—Here is close-up of the board, showing many levers and buttons which bring the log to position, bark it, and send it on its way. These permit variance in operation depending on diameter of log and other factors.

In this picture, the side panels were removed from the operator's bench, showing "inside works." Note how this board has slanted top, with end sections at angles, so barkerman can operate all controls standing in one position.

At right—"3 C" Control panels in separate control room at Powell River for the hydraulic log barker. This is also part of Clark engineered equipment. Clark heavy duty mill type contractors bear the brunt of rapid sequence and continuously repeated cycles of operation. It is unquestionably "heavy duty" to toss around big western logs as though they were tooth-picks and put them through the machine at maximum rate of about three a minute.



control panel in his small soundproof cabin. Canadian Controllers, Ltd., affiliated with Clark Controller Co., who installed the control mechanism, also engineered and built the electrical control for hydraulic barkers in Everett and Longview. The entire barking operation for a single log is expected to take place in about one-half to two-thirds of a minute, depending on the diameter of the log and the ease with which the bark can be stripped from it.

The nozzle carriage is driven back and forth on its wheels by a Filer & Stowell sawmill saw carriage type of shotgun steam cylinder, 12 inches in diameter with a 31 ft. 6 in. stroke. When operating, the carriage reaches a maximum velocity of about 40 ft. per second.

On being ejected from the barker, the barked logs pass through a suspended rubber curtain onto the horizontal discharge chains, at the end of which they are stopped by a conventional log stop and loader. The logs are rolled from the transfer chains as required into a reversible coil chain conveyor, and they may then go in one direction along the conveyor to the storage deck in the whole log chipper plant or in the reverse direction onto a steeply inclined log haul and return down into the log pond and be floated into the small storage booms. If any of these logs, however, are required in the sawmill for lumber or for groundwood pulp blocks they may be kicked, with standard steam log kicker, out of this reversible conveyor onto another transfer deck and carried to the sawmill.

High-pressure water for the large barker and the smaller unit is supplied from three multi-stage centrifugal pumps. Two of these pumps are identical five-stage units manufactured by Northern Foundry & Machine Co. The third is a three-stage unit manufactured by Harlan Engineering Co. in Scotland and is intended to receive water at 850 lbs. per sq. in. from the other two pumps and boost it to a pressure of 1,250 lbs. It is intended to use only the water from the first two pumps, that is 850 lbs., whenever possible for the barking of logs in the two barkers. But when hard barking logs are being received at the mill it may be necessary to use 1,250 lbs. per sq. in. through the nozzle of the large barker, in line with the experience of other mills where hydraulic barkers have been in operation.

Each one of the pumps is direct connected through a gear-flex flexible coupling to a 500-h.p. R.P.M. squirrel cage induction motor. An elaborate system of limit switch protective equipment is to be installed on the rising stem type of valves to protect against the making of any inaccurate valve settings, and in addition pressure switches and temperature bulb connections are being installed on the suction and discharge sides of the three pumps.

Bark and refuse from the barker operation are removed by two refuse chain conveyors that are located beneath the barking level of the barker. The top wear-plates of these two conveyors are perforated with ⅜-inch diameter holes which allow water to drain away from the bark refuse as it is being conveyed slowly towards the main refuse conveyors. This water, along with small particles of bark, drops into a watertight flume and flows into a common sump, and this mixture is continuously drawn off through a nonclogging type of centrifugal pump and is piped into a small vibrating screen, which serves to remove small bark particles from the water an discharges them into the same conveyor that receives the refuse from the perforated plate conveyors. Effluent from the underside of the screen flows into the log pond. This bark material from the logs passes into the sawmill refuse conveyors where finally the mixture of the two systems goes through a 60-inch knife-type hog.

### *Chipping*

All the chip requirements of the present Powell River sulfite mill and for any future kraft mill that may be built there are to be supplied by one 123-inch diameter four-knife Waterous whole log chipper, which is direct connected to a 500-h.p. 240-R.P.M. wound rotor induction motor will chip logs up to 26 inches in diameter and up to a maximum of 26 feet in length.

Logs are taken from the storage deck in the chipper building and fed endwise by means of a concave spike roll type of conveyor into an inclined spout directly above the large chipper. The logs to be chipped are first brought against a stop in this feed-in spout and then have their ends lowered and fed slowly up to the face of the chipper disc by means of a specially designed, air-brake controlled spike roll and apron assembly. When the logs are about two feet above the face of the chipper disc they are allowed to drop free and due to their weight are held against the disc during the chipping operation. The four knives are set to give an approximate chip length of ¾ inch.

The chipper discharges through its base onto a four-foot wide H type chain conveyor, which in turn discharges onto a 48-inch wide belt conveyor, which carries the chips at an incline of 20½ degrees and at a speed of about 600 F.P.M. up into the new chip screen plant.

Maximum diameter of log that the chipper is to handle is set at 26 inches, as a study of the records of the past few years indicates that there is a sufficient volume of logs below this diameter to give the mill's daily chip requirements without any pre-sawing of the barked logs.

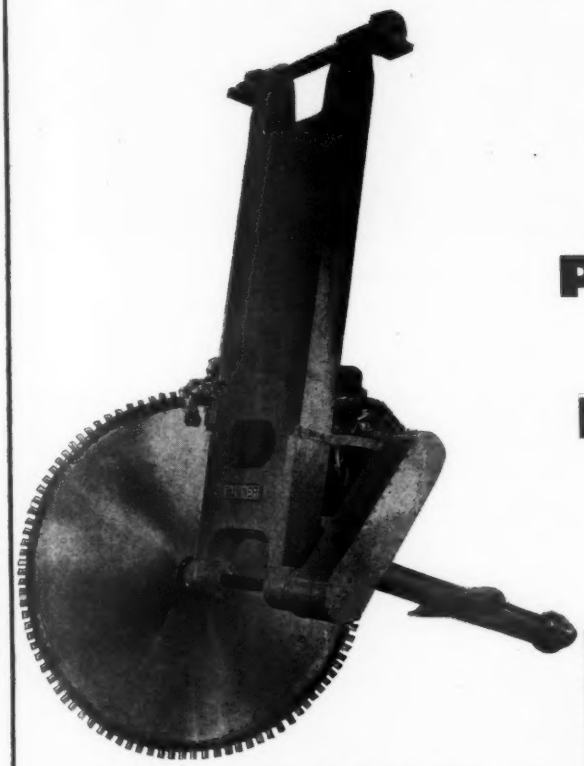
Should there be at any time too few logs of a diameter less than 26 inches and of suitable species for any one day's chip requirements, it is possible to send larger logs to one of the two sawmill carriages and have them reduced to a size which will fit into the chipper spout, similar to the way in which they are handled at the Soundview mill at Everett and elsewhere. The sawn timbers or cants then travel by means of roll conveyors and transfer chains out into the new chipper mill and may be fed into the chipper spout in a manner similar to the round logs.

The Orville-Simpson chip screen is designed to receive all the chips from the whole log chipper and screen them to a size acceptable for sulfite or, possibly in the future, kraft pulp. The equipment in this plant consists of a wide flight conveyor which receives its chips from the 48-inch inclined belt, located above five timber surge bins each of which has a capacity for about 1,000 cubic feet of chips. Special gates in the bottom of this conveyor and just above the middle of the first four of these bins are arranged so that the chips will be more or less equally distributed into the bins, whose purpose is to accept any surge in the flow of chips which may result from the chipping of various diameters of logs. At the bottom of each of the bins is a rotary type of chip feeder each of which is driven from a common line shaft through a roller chain drive. Each feeder discharges chips onto the head end of five inclined gyrating type chip screens.

Chips of suitable size pass through the top screen cloth and discharges over the end of the middle layer of screen cloth onto a 36-inch belt conveyor and are carried directly to any of the six digester house chip bins. Rejected chips discharge onto a small conveyor belt and are carried a short distance into a small chip crusher from which they drop into the boot of a small bucket type

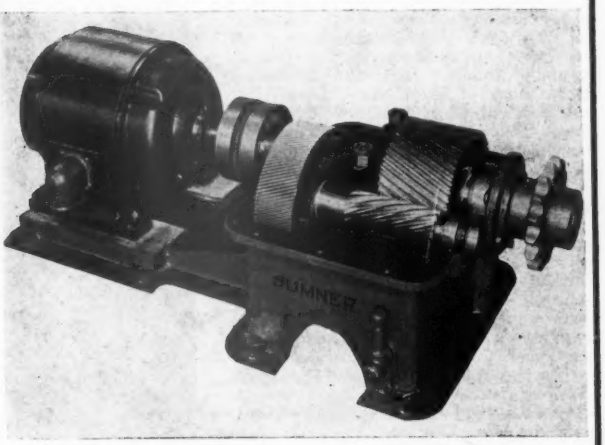
# SUMNER

## PULP-MILL MACHINERY SELECTED FOR POWELL RIVER NEW LOG-BARKING PLANT



SUMNER ALL-STEEL LOG CUT-OFF
With 108-in. Dia. Circular Saw—Direct Motor Drive with Steam-Operated Cylinder

SUMNER PULP MACHINERY INCLUDED:
80-Helical Gear Speed Reducers
9-Foot Log Cut-Off Saw
Log Handling Equipment
Solenoid Operated Cylinders
Misc. Valves & Conveyors




TYPICAL SUMNER HELICAL GEAR SPEED REDUCER

FOR MODERN PACIFIC COAST PULPMILL & SAWMILL MACHINERY—
INVESTIGATE SUMNER—WRITE:—

Canadian SUMNER IRON WORKS LIMITED
3550 EAST BROADWAY VANCOUVER, CANADA

IN U.S.A.—SUMNER IRON WORKS—EVERETT, WASH.

elevator and are discharged into the top of the last surge bin. These chips are then fed out onto the fifth or secondary screen. Those chips passing through the second layer of screen cloth are considered unacceptable for pulp purposes as they are too small for suitable cooking and are consequently sent to the hog fuel system.

The point at which the chips are to be discharged into the digester chip bins is approximately 650 ft. distant from, and 160 ft. above the loading point at the chip screen building. To take care of this the chips are being carried on a 36-inch wide conveyor belt system supported in a steel bridge gallery. This bridge at its upper end will be about 100 feet above the ground level. In addition its is intended to make use of this new bridge to carry the existing hog fuel belt which now conveys imported and sawmill refuse from the sawmill to the steam plant. By relocating this belt and with certain other changes it will be possible to dismantle a large part of the massive and deteriorated timber conveyor bridge now in use between the sawmill and the steam plant hog fuel storage.

## British Columbia Safety Conference

A safety conference held by this industry in Westminster, B. C., recently not only drew in attendance several of the top superintendents in the British Columbia industry but also President E. M. Herb of Westminster Paper Co. and Resident Manager D. A. Evans of Powell River Co. were on hand part of the time. Maybe that's a good sign of increasing practical and serious interest in safety, by others besides safety directors.

This was the third semi-annual conference of the British Columbia Pulp and Paper Industry Safety Association, with 22 representatives from ten manufacturing companies attending. Sessions were in the Hotel Russell where accommodation was provided by Westminster Paper Co. and an inspection tour was made through the Westminster mill.

Representatives from management, supervision and safety direction exchanged ideas. Planning the early return to suitable light work of injured employes, including permanently disabled, was regarded as particularly desirable.

## Sid Collier Views New Celanese Mill Site

Sidney Collier, assistant superintendent of the Puget Sound Pulp Co., Bellingham, reversed the usual procedure and took a cruise up to Alaska as an early spring tonic instead of following the throng to sunny California.

In Prince Rupert, B. C., Sid looked over the site of the new American Celanese Corp. pulp mill. He reports that Prince Rupert is considerably excited over its first industrial acquisition.



**ATTENDING BRITISH COLUMBIA SAFETY CONFERENCE:**

**Front Row (Left to Right): L. Pumphrey, Assistant Supt., Westminster Paper Co.; Leo Kelley, Gen. Supt., B. C. Pulp and Paper Co.; J. H. McLean, Workmen's Compensation Board; G. Holmbergh, Safety Dept., Pacific Mills; S. Slade, Safety Director, Powell River Co.; and C. E. Craig, Plant Superintendent, Sidney Roofing and Paper Co.**

**Middle Row (l. to r.): D. S. Richards, Assistant Supt., B. C. Pulp and Paper Co., Woodfibre; E. Tucker, Safety Director, B. C. Pulp and Paper Co., Ltd., Port Alice; M. A. Plant, Safety Director, Sorg Pulp Co., Ltd., Port Mellon; M. G. MacKenzie, Personnel Department, Pacific Mills Limited, Vancouver; J. F. Flett, Personnel Supervisor, Powell River Co., Powell River; and L. J. Molsted, Assistant Supt., Canadian Boxes Limited, Vancouver.**

**Back Row (l. to r.): J. McMullen, Personnel Director, Pacific Coast Paper Mills, Bellingham, Wash.; R. W. Wardle, Supt., Bartram Paper Products Co.; T. L. Brown, Finishing Room Supt., Westminster Paper Co.; R. C. McDowell, Supt., Bartram Industries, Ltd.; and E. R. Condon, Safety Dept., Pacific Mills.**



**Adam Bell, chairman of the B. C. Workmen's Compensation Board demonstrates a Chem-ox respirator to D. A. Evans (left), Resident Manager of Powell River Co., and E. M. Herb, President of Westminster Paper Co.**

## Dupont Cellophane Plant for Far West

Although plans for construction have been tabled until building conditions become normal, E. I. du Pont de Nemours & Co., of Wilmington, Del., definitely plans construction of a cellophane plant near Eugene, Ore., Homer H. Ewing, du Pont development chief has stated.

## Fred Clark Moves

Frederic C. Clark Associates, consulting engineers, have announced their removal to 50 Church Street, New York City.

Since moving from Boston two years ago, Mr. Clark has found it necessary to add to his staff and secure larger quarters. Henry J. Perry, who has had wide experience in the manufacture of pulp and paper, joined the organization.

PAPER · · · America's 6th Industry









# SHIP PERISHABLES IN PAPER ICEBOX

(NEWS ITEM: *Disposable paper iceboxes are being manufactured at the rate of 1,000 a day for shipping perishable merchandise.*)

Lobsters from Maine . . . orchids from Buenos Aires . . . and they traveled all the way in a paper icebox. A new throw-away container using dry ice refrigerant has been developed for shipping perishables by air, rail and truck. Lined with blanket insulation held in place by corrugated paperboard, this new portable icebox contains a metal-and-cardboard refrigeration unit that can be set to maintain temperatures from 50° F to -20° F. A waterproof bag placed inside the container holds the material being shipped.

Reprint of a 700-word article describing this new paper product is available for the asking.

Paper diapers . . . paper draperies . . . paper wash cloths . . . paper sheets . . . new uses for paper calling for new standards of lightness and toughness, new standards of quality in performance. New responsibilities — new opportunities for the Pulp and Paper Industry.

The Puseyjones Organization is now devoting itself completely to the design and construction of Paper-Making Machinery built to new high standards of speed and efficiency, and to the modernization of existing machines.

Among the new machines under construction by Puseyjones are three of the largest and fastest Fourdrinier Machines, one for white paper for bags, one for Kraft liner board, and one for Kraft paper for multi-wall bags; also one Cylinder machine of record size and speed for the manufacture of floor covering felt. Other machines are under construction for the manufacture of M. G. Kraft specialties, facial tissues, and high grade bristols.

During the next few months Puseyjones equipment will go into production in North Carolina, Massachusetts, Florida, Georgia, New York and California, as well as in Mexico and Sweden.

Puseyjones Engineers will welcome the opportunity to work with you in solving production problems.

**THE PUSEY AND JONES CORPORATION**
**Established 1848. Builders of Paper-Making Machinery**
**Wilmington 99, Delaware, U. S. A.**

THE SIGN OF TRADE MARK SUPERIOR QUALITY

## HAWLEY SOLD

Controlling interest in Hawley Pulp & Paper Co., Oregon City, Ore., has been sold to John E. Wilson, Scarsdale, N, Y.; R. B. Gerard, Kent, Conn., and James H. Molloy, Philadelphia, present owners of Claremont Paper Corp., Claremont, N. H., who will take over management May 31.

Present listed daily capacity in tons at Hawley: Groundwood, 175; unbleached sulphite pulp, 100; newsprint, 150; sulfite wrap, tissue and other papers, 50; other paper, 50. It has four machines.

Sale was announced just as this issue went to press by John H. Smith, president, who said a $300,000 down payment was made. Final payment is due by May 31, when new owners are expected to take over management.

Mill operating personnel will carry on as at present with Carl E. Braun and his assistant manager,James A Wilson, and general superintendent, Austin Nickels heading up the staff.

Mr. Wilson and Mr. Molloy are vice presidents and Mr. Gerard is treasurer of Claremont, a 50-tons-per-day 3-Fourdrienier mill making kraft and sulfite specialties.

The Hawley company is valued at more than $5,500,000. Net sales for last year were $7,145,707, up from $5,595,917 in 1945. Production was 82, 412 tons in 1946. The Claremont owners' option involves more than a majority (estimated at 65%) of the common stock—that owned by Western Cooperage Co., of Portland, Ore., and John H. Smith.



K. S. MULLER (left), who on March 1 bought a 50% interest in Seaport Paper Co., Inc., of Portland, Ore., which was founded last year by WILLIAM G. BATSON (right). Mr. Batson is President and Mr. Muller, Vice President and Treasurer. Mr. Batson had previously been with Paterson Parchment Paper Co., of Bristol, Pa., for 15 years, and his new partner had come from Midwest three years ago to be Northwest Scotch Tape Division representative for Minnesota Mining & Manuf. Co., St. Paul, Minn.

# Newberg, Ore., Pulp Mill Is Sold To Eastern Paper Companies

Last month PULP & PAPER Industry reported that five paper companies with Midwestern mills dependent on outside pulp supply and a pulp sales company had the necessary 66 2/3% of stock in Spaulding Pulp & Paper Co., Newberg, Ore., and that consummation of the deal was assured.

J. C. Compton, president of the Newberg mill, which makes 80 tons a day of unbleached sulfite market pulp and no paper, announced since then that the sale has been carried out.

Mr. Compton stressed the point that the purchasing companies have been buying the Newberg plant's output for several years, so there is actually no important change in the disposition to be made of this pulp. For this reason, the purchasing companies anticipate no changes in their sources of supply as a result of the transaction.

A spokesman for the group now actively entering into direction a Pacific Coast production unit gave assurances they will do all in their power to put the Spaulding mill on a permanent basis and to perpetuate employment and income for that Oregon community.

Mr. Scallan said the Spaulding organization will remain as is and that ultimately expansion and modernization of the mill is contemplated. He declared, "We mean to perpetuate the Spaulding mill as long as the Willamette valley is in existence."

The Spaulding plant, which produces only pulp, was built in 1925 at a cost of $1,000,000.

According to Mr. Compton, it is the policy of the new board to continue present officers in office. The new board had scheduled its first meeting for April 2 in Chicago.

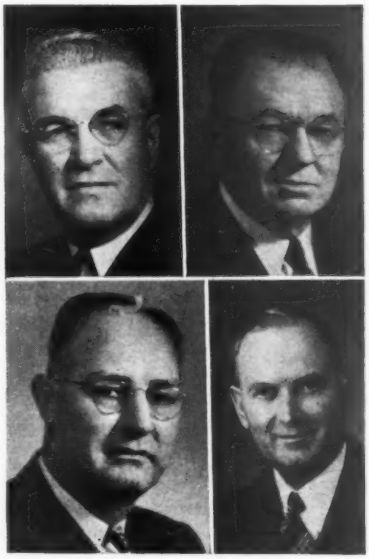
The companies who will share in pulp output and are now part owners of the Newberg mill are:

Watervliet Paper Co., Watervliet, Mich.; Morris Paper Mills, Morris, Ill.; St. Regis Paper Co., New York (for the Bryant, Kalamazoo, Mich., division); Riverside Paper Co., Appleton, Wis., and Cornell Wood Products, Cornell, Wis. (and its affiliate, Hummel & Downing mill of Milwaukee to share). Perkins-Goodwin Co. of New York, pulp and paper sales agency, is also a part owner and will continue to handle disposal of the production at Newberg.

The reported purchase price is $1,500,000. The mill's output was 28,735 tons in 1946.

Some 9460 share of the approximately 13,000 shares of voting common stock have been purchased by the group and additional outstanding shares will be purchased when offered at $100 a share.

New directors are Mr. Scallan, G. K. Ferguson (Watervliet), W. H. Beckwith (Morris), W. Irving Osborne (Cornell), E. C. Hilfert (Riverside), and R. L. Vayo (St. Regis). Mr. Compton continues as director.



THREE NEW VICE PRESIDENTS of Nekoosa-Edwards Paper Co., of Port Edwards and Nekoosa, Wis., recently announced by President John E. Alexander, are:

NEIL E. NASH (upper left), who served on WPB advisory committees during the war and had been Assistant to the President since 1942. (He is one of the industry's best informed men on pulpwood resources.)

A. C. REMLEY (upper right), new Vice President in Charge of Sales, and

CHARLES H. REESE, whose picture was published in our March issue. He is Vice President in Charge of all Manufacturing Processes.

Appointed Manufacturing Superintendents are:

NEIL H. CHRISTIAN (lower l.), in charge of Port Edwards sulfite mill (with Nepco 23 years, he had previously been in charge of bleach plants in both mills, did research in cooking and bleaching and recently was Sulfite Supt.), and

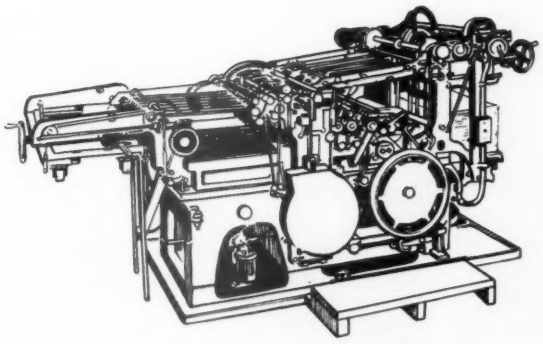
R. A. NUGENT (lower right) in charge of Nekoosa sulfate mill (With Nepco 19 years, formerly in engineering and lab, and lately Kraft Supt.).



# *Both* are PRINTING PRESSES

## WHICH IS YOUR CHOICE for *EFFICIENCY, SPEED and ECONOMY?*

Choosing a supply source for your fiber requirements and a distributor for your product is just as easy . . . and important. Bulkley, Dunton's unequalled service facilities, its long-established world-wide connections and century-old experience are only a few reasons why more and more mills are turning to this alert, progressive organization with their purchasing, distribution and export problems.

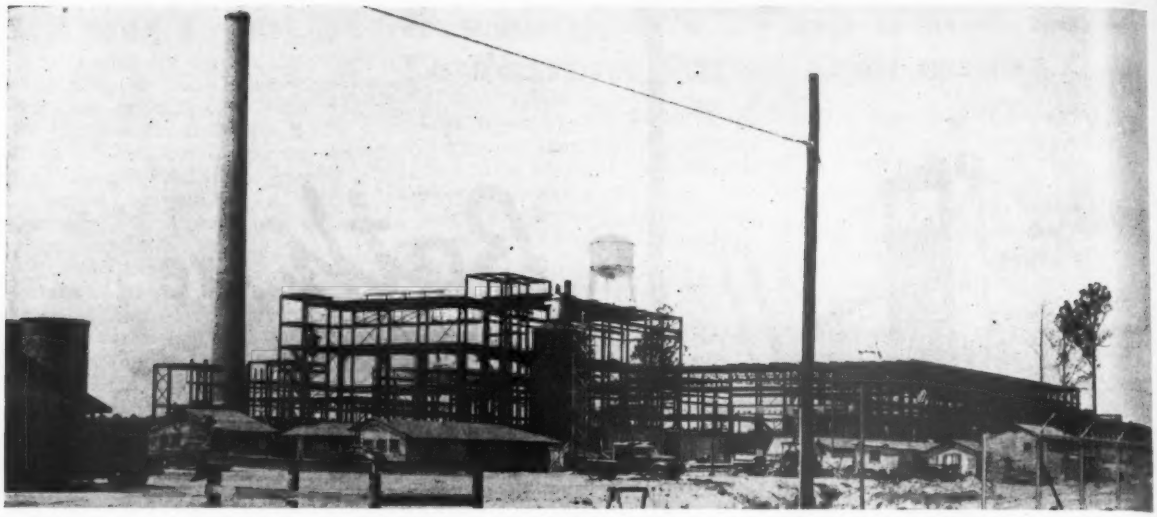


**BULKLEY-DUNTON ORGANIZATION**

295 MADISON AVENUE, NEW YORK 17, N. Y.

*In New England*— **CARTER, RICE & CO. CORPORATION**

Offices and representatives in 47 cities in the United States, Latin America, Europe and the Far East.



Steel work, water tank and digester blow for new 150-ton Hudson Pulp & Paper Co. kraft mill in Palatka, Fla., was up when this picture was taken by PULP & PAPER Industry on Apr. 1.

# PROGRESS AT NEW KRAFT MILL IN PALATKA, FLA.

This picture shows progress on the new 150-tons-per-day pulp and paper mill being built at Palatka, Fla., by Hudson Pulp & Paper Co., when the site was visited by PULP & PAPER Industry last month. First story on this new mill was published in these columns in our January, 1946, issue a month after ground had been broken. It will be called the Southern Division of the paper company which has previously operated only in the Northeast.

J. H. Bringhurst and H. W. Webb are top men on job for Sirrine & Co., Greenville, S. C., engineers on the project. J. E. Pearson is Gen. Supt. and L. V. Forbeck, Project Manager, for Merritt, Chapman & Scott, New York, general contractors.

Joe L. Richardson, formerly of Gulf States Paper Corp., is Hudson's production manager.

L. A. Harper, formerly with Brunswick Pulp & Paper Co., is pulp mill superintendent.

Sam Siegel, formerly mill manager at Hudson's Moore & Thompson Division, completes the present top roster.

H. M. Shirley, formerly with Union Bag & Paper Corp., is forester for the Hudson Land and Timber Division.

Abraham Mazer, of New York, is Hudson's president, and Jacob (Jack) Mazer is executive vice-president.

The mill will have a new 232-inch Fourdrinier machine.



ARTHUR G. READY, who has been appointed Mill Development Engineer, Kraft Pulp and Board Division, National Container Corp. Mr. Ready was with George F. Hardy in 1924 at Moss Point, Miss. He has also been with the Brown Paper Mill Co., Monroe, La., and with northern mills of Robert Gair Co. In 1935 he returned with Hardy to Union Bag construction in Savannah, and later for Southland at Lufkin, Tex. In 1940 he joined St. Marys Kraft Corp., St. Marys, Ga. He had far western experience, being a year at Everett Pulp & Paper Co. In 1943 he joined Rayonier and was given assignments in Washington and Florida, and in 1944-46 he assisted Cia Industrial de Antenquique, S. A., of Gudalajara, Mexico, in selection of machinery and personnel for those operations. He is a graduate of St. Johns College.

# Paper Corp. Buys Swedish Mill

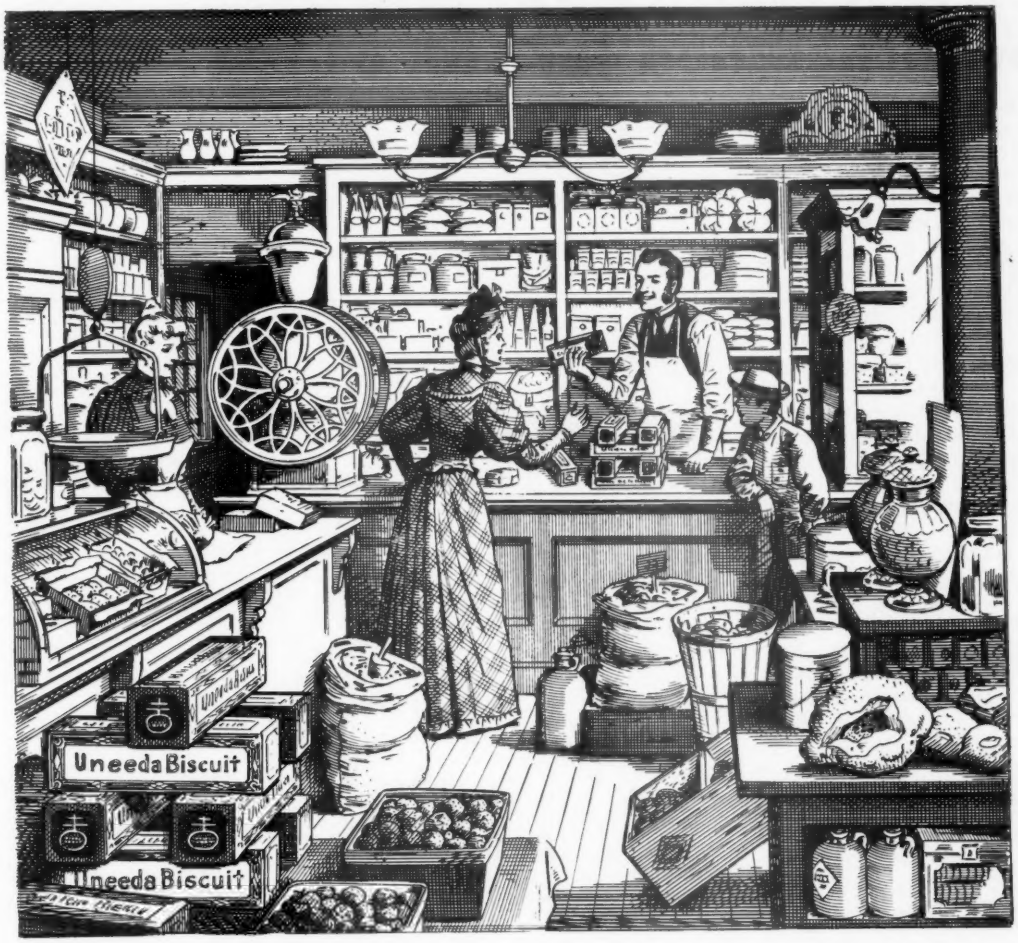
Paper Corp. of America, 500 5th Ave., New York, has purchased the pulp mill known as Tegafors in Hjarpin, Sweden, according to I. Laurence Lessavoy, president of the company. The mill was owned by Norwegian interests and therefore did not come under the ban, begun in 1916, which prohibits the sale of Swedish mills to foreign interests. As for the attitude of the Swedish industry toward the move, Mr. Lessavoy told PULP & PAPER Industry that it was generally pleased at the acquisition by U. S. interests.

The Tegafors mill produces both dissolving pulps and regular grades, and operates an alcohol unit. Some improvements are contemplated, but the mill is understood to be in modern shape.

Paper Corp. of America has for some time been operating the mill at Cheboygan, Mich., at one time known as the North American Pulp & Paper Corp. but for several years inoperative. Extensive improvements have been made there, according to Robert W. LeRoy, in charge of pulp and paper operations for the Lessavoy interests and executive vice president of Paper Corp. of America. Mr. LeRoy was formerly with Rayonier Incorporated.

Paper Corp. more recently acquired the Amoskeag Paper Mills Co., Manchester, New Hampshire, and it is understood that negotiations are under way for the purchase of another eastern mill.

Mr. Lessavoy, already well known in the textile industry, entered the paper industry during the war with the purchase of the Cheboygan mill.




# The Paper Package that Started a Revolution

Fifty years ago, most of the nation's foods were sold in bulk. Sacks and barrels slumped on the grocers' floors. Customers were served by hand and scoop.

Then in 1898, National Biscuit Company developed a new soda cracker, sealed it in a protective paperboard carton lined with wax paper and covered with a printed paper wrapper. It gave the product a name, "Uneeda Biscuit," and advertised it to the world. A uniformly good product; a sanitary package; a distinctive name; advertising. Together they revolutionized merchandising.

More manufacturers packaged their goods in paper. Advertising increased. Publications prospered. Sales soared. Business boomed. More people had jobs at better wages—to buy more goods! All because of paper. Today, paperboard accounts for more than half the tonnage of all the paper made in America.

*The dramatic story of paper is told in the sound-and-color film, "Paper — Pacemaker of Progress," and in a book under the same title. Both are presented by F. C. Huyck & Sons as a tribute to the Paper Industry. The book will be sent free upon request.*

**F. C. HUYCK & SONS • *Kenwood Mills* • ALBANY, NEW YORK**

KENWOOD WOOL PRODUCTS

**HUYCK *Felts***

Pacific Coast Representatives: Pacific Coast Supply Co., Public Service Bldg., Portland, Ore.; 343 Sansome St., San Francisco, Calif.

# Five National TAPPI Meetings Now Scheduled for Fall of 1947

There will be *five* TAPPI meetings in the Fall, rather than four as originally planned during Paper Week, according to R. G. Macdonald, secretary-manager of the association, who made the first announcement of the added meeting at the regular gathering of the Delaware, Valley section at the Engineers' Club, Philadelphia, on April 11.

The added meeting will be a session on Strawboard to take place some time in October at Alton, Ill. Mr. Macdonald also announced further details on the Appleton, Wis., meeting which takes place Sept. 3-5, and will be devoted to Fundamental Research.

This meeting is to be tied in with the Wood Chemistry division of the United Nations organization on food and agriculture. Housing, and the contribution of paper, paperboard and synthetic building materials, will be stressed on an international scale and prominent research men from both the U. S. and foreign countries are expected to be in attendance.

Mr. Macdonald also revealed that two divisions of the Superintendents Association will meet with TAPPI for the Kraft Pulping and Chemical By-Products session at Asheville, N. C., on Oct. 6-7, making this one of the largest of the Fall meetings. As announced in previous issues, the Acid Pulping meeting will take place at Minneapolis, and the second annual Engineering session at Philadelphia.

With Mr. Macdonald as an honor guest at the April meeting of the Delaware valley section was Dr. Harry Lewis, dean of the Institute of Paper Chemistry who will be guilding the UN session at Appleton in September.

Speaker for the evening was Dr. M. A. Dahlen, E. I. Dupont Company, whose subject was "Long Range Chemical Research." An organic chemist "turned salesman," Dr. Dahlen discussed the four main groups of research. He visualized them as improvement research, imitative research (don't spend too much time on it, he advised), creative research, and pioneering research.

He was introduced by John Weidner, Container Corporation, chairman of the program committee. King Watt, Curtis Paper Company, presided in the absence of John McAdam. At this meeting all officers were unanimously re-elected for 1947-1948. They are: John McAdam, National Vulcanized Fibre, chairman; King Watt, first vice-chairman; John Weidner, second vice chairman; and Lois Hans, Hercules Powder, secretary.

The subject of the May meeting is to be lithography printing.

### *September Meeting Set*

The big meeting of the year for the New York-Canadian division of the Superintendents' Association, largest division on the continent, will be held Sept. 8 to 12 at the famous Manior Richelieu which dominates Murray Bay, Quebec, Canada. Jean Paul Rolland of Rolland Paper Co., Ltd., is chairman of the division.

# Asheville TAPPI Meeting Is Set; Chicago and Gearhart Draw Many

Dates for the Alkaline Pulping and Chemical By-Products Fall Meeting of TAPPI have been set for Oct. 6th and 7th in Asheville, N. C. These early week dates—Monday and Tuesday—are similar to those set for the previous Alkaline group meeting held last fall in New Orleans.

Wilbur Gillespie, vice president of TAPPI and technical director at Gaylord Container Corp., K. G. Chesley, Crosset Industries, chairman of TAPPI's Alkaline pulping committee; and R. H. Stevens, technical director, National Container Corp., Jacksonville, who heads chemical products, are among the kraft men expected to have important duties at Asheville.

These Fall Meetings for TAPPI are in line with the idea of regionalizing the technical work to a greater extent and thereby getting more accomplished in the different fields. The TAPPI rule book requires that one of these meetings be designed as an "official" Fall Meeting for the top officers' business but this may be changed.

The separation and great distance between the kraft industry meeting in Asheville and the proposed sulfite meeting has caused some industry men to worry lest this is going to aggravate a sharp, or sharper, cleavage between the two industries.

"It may start them fighting even more than they are now doing," said one of TAPPI's "elder statesmen". "It may be reflected in sales and price wars."

But this worry is not very widely shared in the industry, apparently, and many members think the two groups can get more done from a technical standpoint by separation. This is indicated by the popularity of separate meetings last year in Milwaukee, New Orleans and Detroit.

### *Chicago and Gearhart Meetings*

Two big meetings, meanwhile are well under way for the weekend of May 22 to 24. One is the National Superintendents at the Edgewater Beach Hotel in Chicago, which will probably draw 1,000 and the Joint Spring Meeting of Pacific Coast Superintendents and TAPPI at Gearhart, on the Oregon Coast, which will draw close to 400 very likely.

### *Northwestern Superintendents*

The big spring meeting of the Northwestern Division if the Superintendents Association headed this year by R. A. Nugent, general superintendent of Nekoosa-Edwards Paper Co., Nekoosa, Wis., is going to be held at King's Gateway hotel, Land O'Lakes, Wis., resort town on the Wisconsin-Northern Michigan line on June 6-7.

Sigge Ekman, sulfite superintendent at Rhinelander Paper Co., and first vice chairman of the division, is the general chairman of the spring meeting.

### *Southern Safety Group*

The Southern Pulp & Paper Safety Association held its annual meeting at Savannah, April 21-22 with C. L. R. Doughterty of Union Bag presiding.

## Texas Man's Service

Bob Webb, manager of the Harlingen, Texas, division of the Crown Willamette sales organization, had completed 40 years of service with that company in April.

INCIDENTS IN SMITHway PRESSURE VESSEL RESEARCH

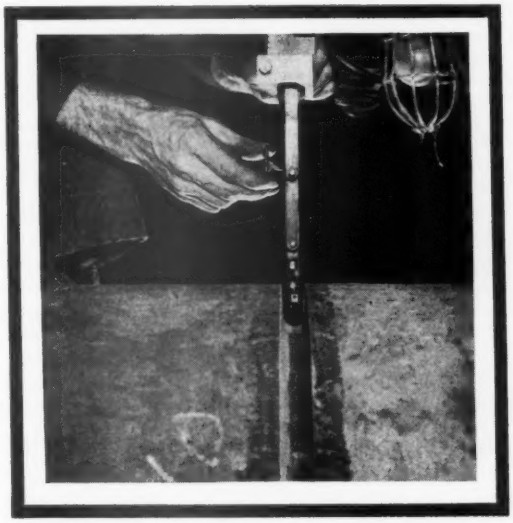
PROJECT No. 33,695

# *Reducing welding time 50% to 80% on heavy steel sections*

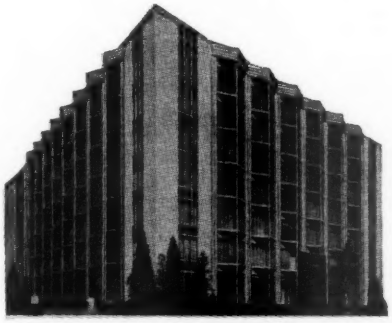
SUCCESSFUL welding of heavy steel sections above three inches thick has always been a serious problem. One reason is the necessity for using multiple-layer manual welding. It has been impractical heretofore to seek satisfactory results in heavy section welding by the submerged-arc method because of inherent characteristics of the process.

As a project of integrated research among several A. O. Smith laboratories, however, this problem began to yield. To weld a four-inch section under high preheat in cramped quarters, there was evolved a unique, multiple-layer submerged-arc welding technique which produces uniformly satisfactory results on sections up to eight inches thick. In addition three other desirable results are obtained:

1—It reduced man-hours of welding time 50% to 80%.
2—The process was applicable to high tensile steels.
3—It materially reduced the inherent risk in welding at high preheats.



Considerable practical experience with this technique, augmented by the development of specially designed equipment, constitutes a distinct advancement in the art of welding, offering new advantages to designers of welded structures.



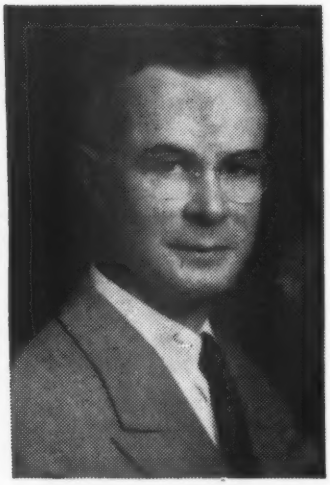
*A. O. Smith Research and Engineering Building, Milwaukee*

A. O. SMITH Corporation

New York 17 • Philadelphia 5 • Pittsburgh 19 • Atlanta 3 • Chicago 4
Tulsa 3 • Houston 2 • Seattle 1 • Los Angeles 14
International Division: Milwaukee 1

MAKERS OF AUTO FRAMES • PRESSURE VESSELS • LINE PIPE • OIL-WELL CASING • BREWERY TANKS
WELDING EQUIPMENT • TURBINE PUMPS • PETROLEUM METERS • AND OTHER PRODUCTS

# Howard Mills Start on Second Half Century; Top Executives Rose From Lowest Employe Ranks



H. A. LEGGE, President of Howard Paper Mills, Inc., started out as a helper after school in the Urbana, Ohio, division of this company.

A half century of operation is now behind the three jointly-operated Howard Paper Mills of Ohio, manufacturers of high quality writing, bond and other fine papers.

These mills are starting a second half century of operation under the energetic management of men who worked their way up to their present positions from the lowest jobs in the mills. Although dependent on outside wood pulp and rag supply, the second half century for these mills at Dayton, Urbana and Franklin in the Miami Valley region of Ohio is bright—for two good reasons. One is the type of men who have reached top executive positions and the other is the "know-how" of the technical and operations staffs in the making of fine papers.

These two reasons were impressively evident to PULP & PAPER Industry on a recent visit to the Howard mills. And another thing that this magazine observed first hand—the 50th anniversary of the company on March 24 was just another "working day." The oldest and best traditions of papermaking are preserved in these Howard mills.

Present plans call for a program of improvement of existing major equipment in a great many ways. The Aetna Division in Dayton, which uses rag stock, has two rather small Fourdriniers, Shartle-Dilts Centrifiners and supercalenders among its equipment. The other two mills use sulfite pulps, largely from the Pacific Coast and Canada. The Howard Division at Urbana has two Pusey & Jones Fourdriniers, The Maxwell Division, Franklin, has the largest Fourdrinier in the group—138 in. trim. Rated capacities daily are 50 tons at Franklin, 50 at Urbana and 45 at Dayton.

The Dayton Envelope Co. is also a property of Howard Paper Mills, Inc., having been organized as a fourth separate company of the group by the late Colonel H. Maxwell Howard, who died on Dec. 31, 1945. He was president of all four companies, each of which was started as a separate organization. The Howard and Maxwell companies were the first ones, followed by the Dayton expansion.

Colonel Howard was the kind of operator to whom the paper industry owes the stability and sound future it has achieved. Profits were plowed back into the companies— up to something like $10,000,000 over the years—by the Colonel. He was ever alert to the need for research and close contact with customers and their needs, in order to keep his mills up-to-date.

An employe management system was developed under him and so, when he died, capable and well-grounded executives were ready to step into leadership. He had no relatives active in the company, although members of related families are financially interested.

### *Boy Helper to President*

It was H. A. Legge, who started in working after schools as a boy helper at the Urbana mill, who moved up to the presidency of this company last year.

W. B. Zimmerman, who started as an office boy at the Maxwell mill, was named executive vice president for all the mills. Mr. Zimmerman wasn't office boy long; he wanted to learn the operations and went to work at the bottom of the ladder in the finishing room. He worked up to resident managership of the Maxwell mill and it was from that post that he advanced to the direction of all the mills.

He continues to maintain headquarters at Franklin.

Charles F. Goodenough and Ken P. Geohegan are now vice presidents, the latter continuing as technical director with his office in Dayton. Incidentally, PULP & PAPER Industry found Mr. Geohegan, one of TAPPI's "elder statesmen", seated behind a wonderful old roll-top



W. B. ZIMMERMAN, who worked up from office boy in the Howard organization, is Executive Vice President of all operations of Howard Paper Mills, Inc. He continues in offices at Franklin, Ohio, south of Dayton, where he was formerly the Mill Mgr.

desk, with a multitude of handy pigeon-holes, an evidence that his company finds some old things still better than new-fangled ones.

J. E. Minch, general manager at Dayton, also has broad duties in sales and is well known in the sales field of this industry. R. E. Boswell is general manager at Franklin and C. M. Shockey holds that title at Urbana.

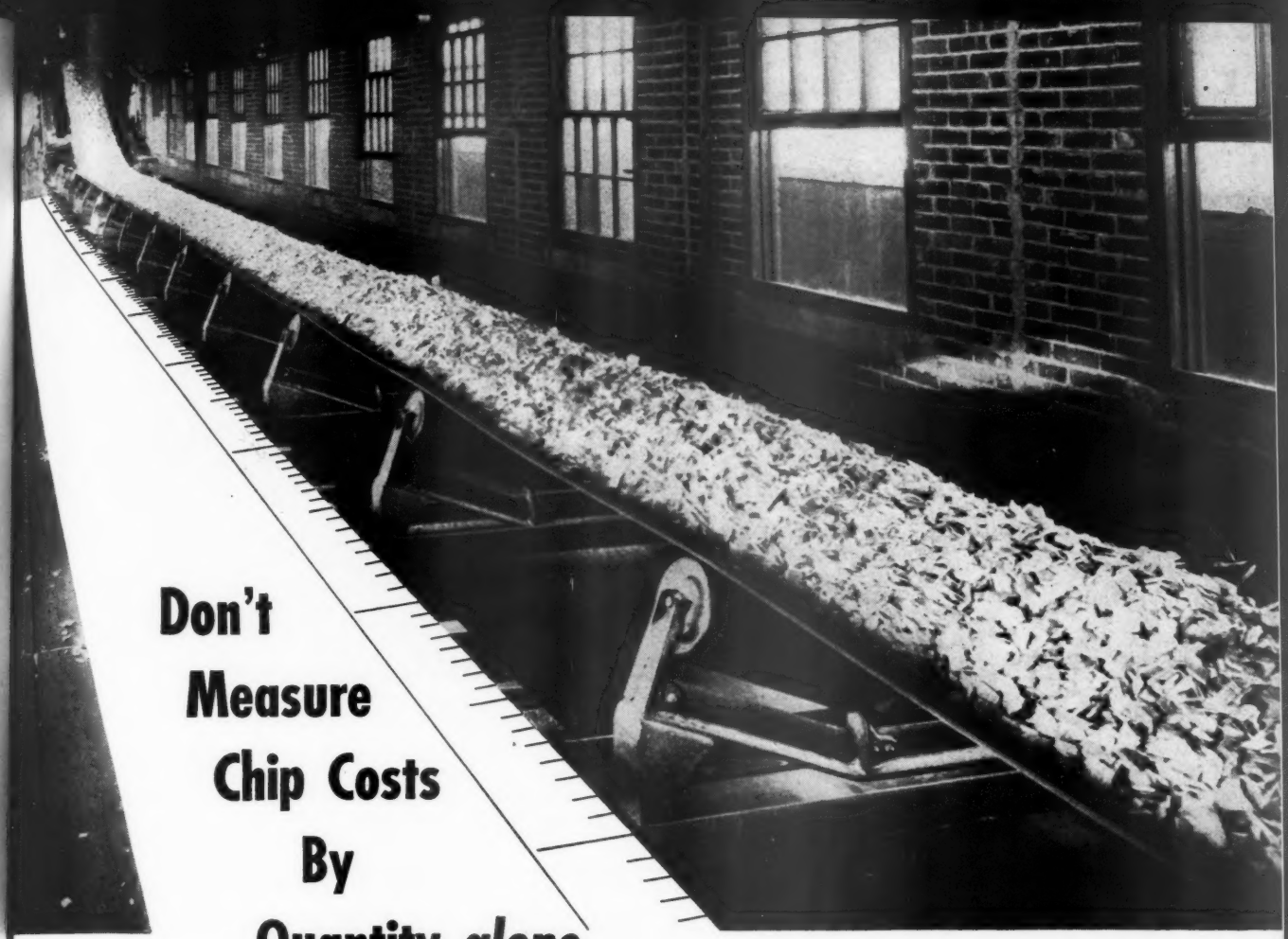
Superintendents are John F. Yordy, Urbana; C. F. Goodenough, Dayton, and Ken Matchuk, Maxwell. Chief engineers are J. H. Tate, Urbana, C. D. Schrader at Franklin and H. Bolinski, Dayton. Chief chemists: C. E. Brandon, Dayton; Edward Johnson, Franklin, and Leon Tyler, Urbana. The P. A.'s are E. L. Oler, Dayton; G. K. Larick, Franklin, and G. B. O'Meara, Urbana.

They were all on the job that 50th anniversary day!

## Superintendent Burr of Great Northern Dies

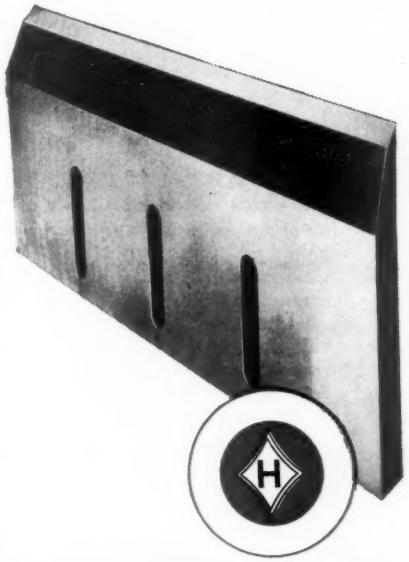
Charles H. Burr, superintendent of the East Millinocket (Maine) mill of the Great Northern Paper Co., passed away on Mar. 29.

He was born in 1872 at Tweed, Ontario, and at an early age worked in New York state mills including the Remington Paper Mills, the Victoria Paper Co., and in various International mills. He joined Great Northern in 1914 as superintendent at Madison, and went to East Millinocket in 1918. He is survived by his widow, three daughters, two sons, a sister and brother.



# Don't Measure Chip Costs By Quantity *alone*—

## LOOK AT QUALITY!



Sure, chip volume is important in your mill's production. But chip *quality* can make or break the profit on that volume.

Oversize chips must be re-chipped—at extra cost. And, oversize chips are usually bruised chips. Even when re-chipped, they require stronger acids, higher pressures, longer cooking—at more cost. And the quality of the pulp still suffers—at the cost of user satisfaction.

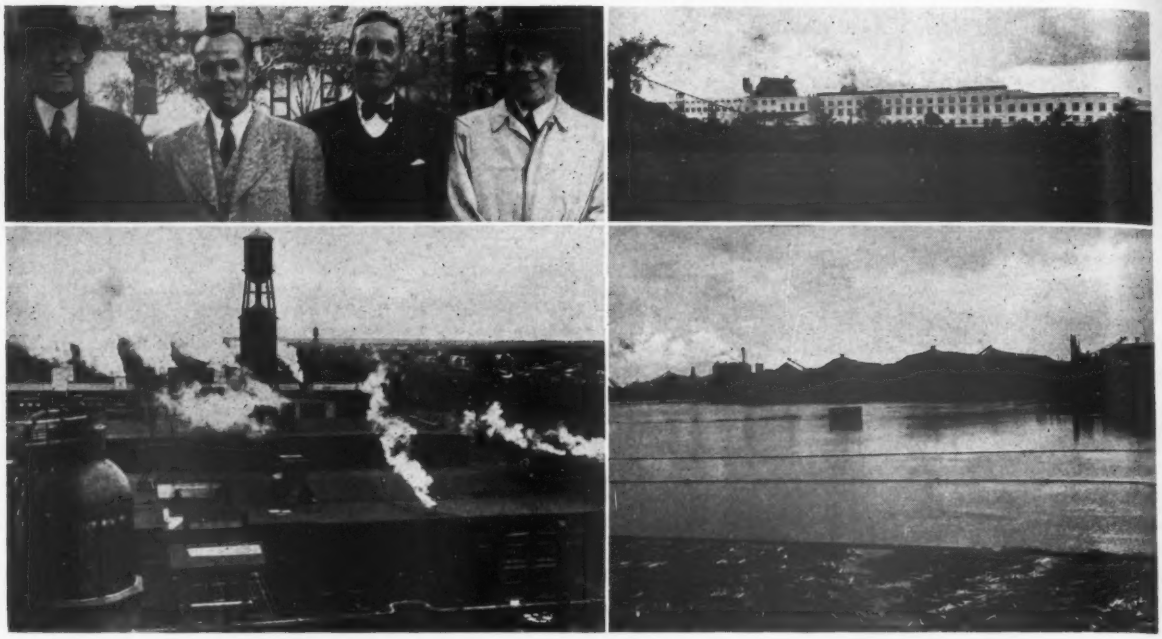
Then there's sawdust waste. Every mill man knows it's a loss which adds to chip costs.

The answer? Chipper knives that stay sharp longer! The longer they stay sharp, the greater your volume of uniform quality chips—with lower chip-reduction costs, sawdust waste, and knife grinding expense.

Heppenstall Chipper Knives *do* stay sharp longer—serve longer. The steel that's in them, the way they're heat treated and finished, and their very design are reasons why. For volume *and* quality, try a set. Heppenstall Company, Pittsburgh 1, Pennsylvania.

**HEPPENSTALL**

**E. I. S. Chipper Knives**



**PERHAPS GREATEST CONCENTRATION** of newsprint mills in the world is at Three Rivers, Quebec, recently visited by a PULP & PAPER INDUSTRY editor. Here are the three mills and their representatives. Also shown is part of a kraft mill in the same Quebec center.

Upper left (left to right): CARL JENTZ, Gen. Supt., St. Lawrence Paper Mills; H. S. TIMMIS, Resident Mgr., Wayagamack mill of Consolidated Paper Corp.; J. G. VINING, Division Accountant, Consolidated Paper Corp., and FRANK FOWLER, Canadian International Paper Co.

Lower left: Part of Consolidated's Wayagamack mill, showing kraft mill in foreground and newsprint mill in rear.

Upper right: Three Rivers mill of St. Lawrence Paper Mills.

Lower right: Vast block piles and part of mill buildings of Canadian International Paper Co. at Three Rivers.

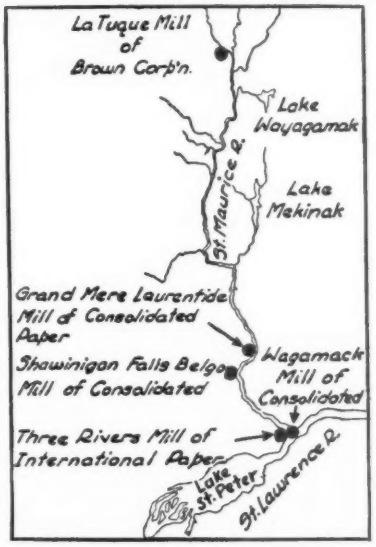
# A VISIT TO FAMOUS MILLS OF THREE RIVERS; EXPANSION PROGRAM AT WAYAGAMACK MILL

Probably nowhere else in the world is there such a concentration of newsprint production as at Three Rivers, Quebec, where three of Canada's biggest companies—Consolidated, St. Lawrence and Canadian International—operate mills.

Cheap power, strategic waterway location on the St. Lawrence River and access to tremendous stands of timber have contributed to make Three Rivers famous for generations as a source of pulp and paper. Today, the mills are busier than ever, with a total output of newsprint alone running close to 1800 tons daily.

Three Rivers was visited recently by a PULP & PAPER INDUSTRY editor and an opportunity was provided to meet some of the chief operating executives of the three companies and see how the mills perform their production job.

In most instances, the mills are carrying on with machines and equipment pretty well as they have been for several years, but an important expansion program is currently under way at Consolidated, whose Wayagamack division is based at Three Rivers where H. S. Timmis is resident manager, under Richard Collins, manager of manufacturing, who makes his headquarters at nearby Grand Mere.




Shows relative location of pulp mills discussed in accompanying article.

At the Wayagamack mill a new 10-knife Carthage chipper is being installed with Dillon screen, and the whole of the chip handling setup is being improved, with conveyers and other equipment.

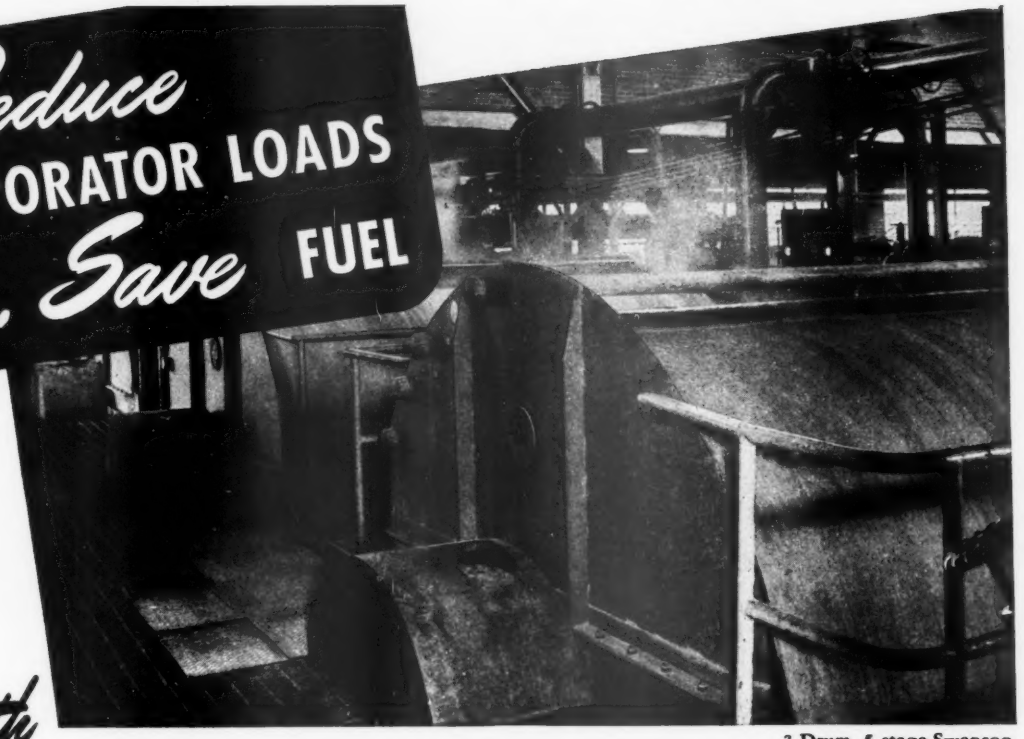
In the evaporating system a Swenson sextuple-effect evaporator has been installed and is now in operation, replacing three older quintuple-effect evaporators. The installation was made by the Whiting Corp., Ltd. (Canada). The Swenson-Nyman two-stage washing system has been in operation several years, replacing a series of diffuser tanks.

Also through Whiting Corp., Ltd., (Canada), Consolidated equipped this mill with seven new digester heaters for indirect cooking designed by Electric Steel Foundry Co. of Portland, Ore. Improved operation and reduction of maintenance to a negligible amount have resulted.

For the recovery process Combus'ion Engineering Co. has installed a new unit complete with auxiliaries to replace six smaller furnaces previously operated.

Another recent addition is a lime kiln 260 feet long by 7 feet diam-

# Reduce EVAPORATOR LOADS . . . Save FUEL



3-Drum, 5-stage Swenson-Nyman Pulp Washer

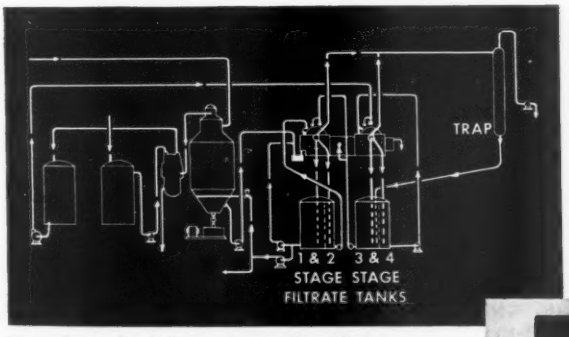
## with Swenson-Nyman Pulp Washers . . .

Numerous installations of Swenson-Nyman Pulp Washers have demonstrated the ability of this equipment to wash pulp clean with a low dilution factor. In a typical instance, the dilution factor is 1.8 pounds of water per pound of AD pulp; while soda losses amount to only 25 to 35 pounds per ton of pulp.

This extremely high efficiency is obtained by scientific engineering of the equipment itself—a rotary vacuum filter design that incorporates multi-stage counter-current washing in a single drum—and the equally scientific application of the equipment to the particular type of pulp being washed.

Present trends are toward an increasing number of washing stages . . . 3, 4, 5, and even 6 stages are now being employed, thus making greater use of the wash water.

The Swenson-Nyman Pulp Washer operates as a closed system, avoiding chemical loss to the sewer . . . and it minimizes foaming, the most troublesome aspect of the pulp washing operation. A full description of this equipment is given in Bulletin F-104.




Flow sheet of a 2-drum, 4-stage installation

- Black Liquor Evaporators
- Pulp Washers • Lime Sludge Filters
- Causticizers • Digester Blow Condensers
- Surface Condensers
- Kraft Pulp Deckers

**SWENSON**

**SWENSON EVAPORATOR COMPANY**

Division of Whiting Corporation
15632 Lathrop Avenue, Harvey, Ill.
Eastern Sales Office and Export Department:
30 Church St., New York 7, N. Y.

eter. Dorr continuous causticizing and green liquor clarification equipment will soon be in operation.

During the past two years the Wayagamack mill has replaced all eight of its digesters — Dominion Bridge handled the job — and equipped them with Esco (Electric Steel) units. Stainless steel Allis-Chalmers pumps have also been installed, with heaters supplied by Whiting Corporation.

E. R. McMullen, formerly groundwood superintendent for the Belgo division, is now general superintendent at Wayagamack.

Wayagamack's average newsprint production is 190 to 200 tons daily, kraft paper, 165 tons daily and kraft pulp 240 tons a day. It is the only Three Rivers mill manufacturing kraft, by the way. Tissue and splicing film are also a part of the output.

Kraft paper mill equipment at Wayagamack includes two Fourdrinier machines for MF paper and four Yankee machines for MG papers. In the newsprint department there are two 166-inch Walmsley machines. In the Cap de Madelaine mill, a couple of miles to the north and included in the Wayagamack division, there are three 166-inch machines for newsprint and these will be in partial operation by the close of this year after a considerable period of idleness. The so-called Cap mill has a rating of 275 tons of newsprint daily.

Wayagamack mill is one of the few eastern Canadian mills that have been engaged in kraft production for a good many years. The company's experience with kraft goes back to 1912, so it rates as a pioneer in that branch of production.

Most of its pulpwood comes by River drive from the St. Maurice or down L'Assomption River to Charlemagne from where it is barged to Three-Rivers or the Cap Mill. Consolidated Paper Corporation owns Anticosti Island and some wood will come from there too.

Consolidated's manufacturing setup includes the two Wayagamack mills—Three Rivers and Cap de Madelaine; the Belgo division at Shawinigan Falls; the Laurentide division at Grand Mere and the Port Alfred division. Of these the Wayagamack division is the most diversified in production.

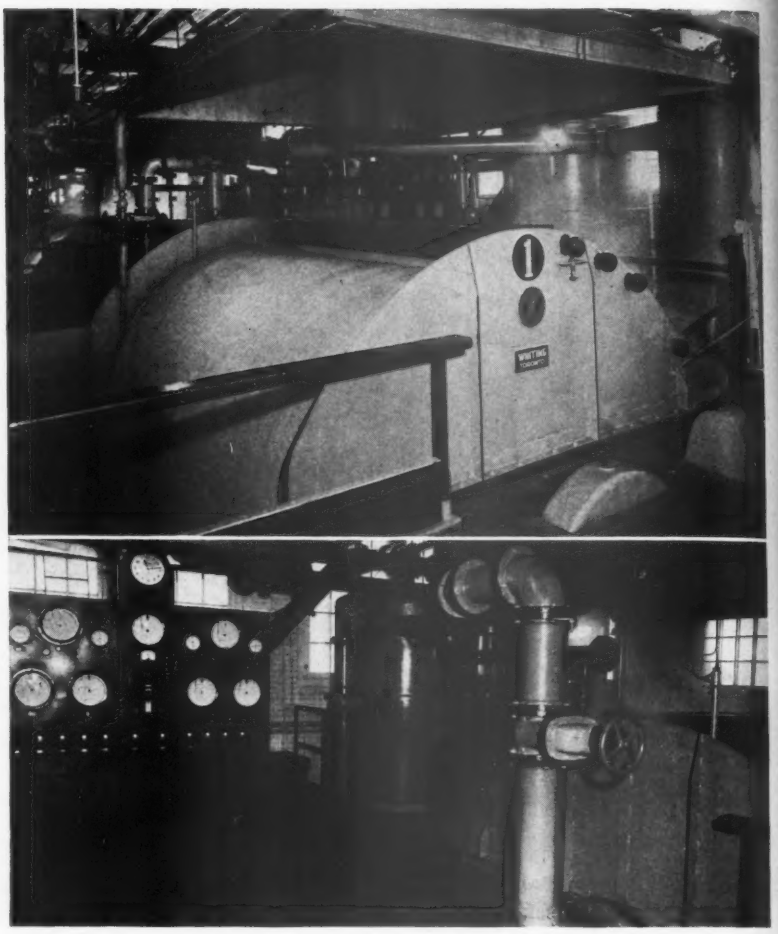
Jack West is resident manager at the big Three Rivers division mill of Canadian International, with Eric Lundquist general superintendent.

At the St. Lawrence mill S. E. Williams is resident manager, with Carl Jentzen general superintendent. Gordon Sutton, formerly paper mill superintendent, is now general superintendent at Lake St. John Power & Paper Co., Dolbeau, Que.

Canadian International's Three Rivers mill has a production of about 800 tons of newsprint daily, 725 tons of groundwood and 200 tons of sulfite. Equipment consists of seven digesters, eight 160-inch Fourdriniers, a cylinder machine, seven beaters and six jordans.

The St. Lawrence mill has six 160-inch Fourdriniers with a daily capacity of close to 700 tons of newsprint daily. There are four digesters, three two-roll wet machines, four beaters, six save-alls, installed by Oliver United Filters Inc.; one Sherbrooke vacuum filter.

All three mills purchase their power from Shawinigan Water & Power Co.



**PICTURES OF SWENSON-NYMAN TWO-STAGE WASHING SYSTEM at Wayagamack Division of Consolidated Paper Corp., Three Rivers, Quebec.**

**This is rated a successful modern installation of this type, employing up-to-date methods. Above: Washer, with instrument panel in background. Below: Control board and vacuum receiver. Note washer at right side.**

**Whiting Corp., Ltd., of Toronto, Canada, made this installation. Swenson Evaporator Co., is a division of Whiting Corp., Harvey, Ill. The Swenson washer was invented by C. B. Nyman, whose headquarters are at Harvey. R. A. Garnett is representative at Toronto. A Swenson sextuple evaporator is also in operation at the Wayagamack mill.**

## Chicoutimi Pulp Mills

The Chicoutimi pulp mills, long a source of anxiety to the Quebec government, is again the subject of legislation before the provincial legislature. The government plans to extend the time for the purchase or expropriation of the mills with a view to selling them later to private interests capable of keeping them in operation.

## New Bathurst Exec.

R. H. Christian has been appointed as assistant to the vice president and secretary-treasurer of the Bathurst Power & Paper Co. He was previously associated with Abitibi Power & Paper Co. in Toronto for 15 years.

# Another *NEW* for Paper... LAUNDRY TAGS of Wet-Strength Paper made with PAREZ† RESIN 607




THESE DISPOSABLE paper laundry tags have just "been through the mill" at a large commercial laundry. Though still soaking wet, they are unfrayed, firmly attached, unblurred, and easy to read. *And they cost less than conventional cloth tags.*

What enables these paper tags to do the job of cloth? The answer is simple: PAREZ Resin 607 was added during the manufacturing process. PAREZ binds the fibres together with a bond insoluble in water and most other liquids, imparting exceptional wet and dry strength, improved tensile and bursting strength, and added folding resistance.

Wet-strength papers made with PAREZ are steadily finding more markets. Already in wide use in the manufacture of absorbent papers, bag and sack papers, saturating papers, photographic papers, locker paper, twisting papers and wrappings, they are coming into the home in the form of durable wet-strength paper tablecloths and napkins . . . towels and draperies . . . dusting papers . . . in fact, wherever you want papers to remain strong and difficult to tear even when soaking wet. If your business is paper, paper products, or packaging, it will pay you to consult our technical service representatives. They'll be glad to work with you in improving your present products or devising new ones.

*WHEN PERFORMANCE COUNTS . . . CALL ON CYANAMID*

*Industrial Chemicals Division* **AMERICAN CYANAMID COMPANY**

**30 ROCKEFELLER PLAZA • NEW YORK 20, N. Y.**




*Reg. U. S. Pat. Off. **Trade-mark

DISTRICT OFFICES: Boston, Massachusetts; Philadelphia, Pennsylvania; Baltimore, Maryland; Charlotte, North Carolina; Cleveland, Ohio; Chicago, Illinois; Kalamazoo, Michigan; Detroit, Michigan; St. Louis, Missouri; Azusa, California; Seattle, Washington. In Canada: Dillons Chemical Company, Ltd., Montreal and Toronto.

†Trade-mark of American Cyanamid Company covering its synthetic resins for use by the paper industry. The processes under which PAREZ is applied in the production of wet-strength paper are covered by U.S. Patents Nos. 2,291,079, 2,291,080 and 2,345,543 and U. S. Patent Application Serial No. 453,032

# Crown Zellerbach Appointments



**IN THIS GROUP** are three men of Crown Zellerbach who have important new assignments, as was announced in our April issue.

Left to right, in the picture, are: Vice President Alexander Heron; E. W. Erickson, who has been loaned to Fibreboard Products, Inc., to supervise construction and start-up of the new Fibreboard kraft pulp and paper mill at East Antioch, Calif.; Norman Lewthwaite, promoted from Pulp Mill Supt. to Assistant Manager at Port Townsend, Wash., Crown Z kraft mill; Leonard Ziel, promoted from Assistant Manager to Resident Manager at Port Townsend (succeeding Mr. Erickson), and President J. D. Zellerbach.

This picture was taken at Port Townsend pin dinner.

As reported briefly in our April issue, appointment of four new mill managers and some other important and new assignments took effect in Crown Zellerbach Corp. organization last month.

As announced by President J. D. Zellerbach at a pin dinner in Port Townsend, Wash., for employes of the big kraft mill there, these follow:

Reed. O. Hunt, assistant manager of manufacturing, San Francisco; E. W. Erickson, in charge of construction and start-up of new Fibreboard pulp and paper mill at East Antioch, Calif. (on San Francisco Bay); Peter Sinclair, resident manager at West Linn, Ore.; Ray Dupuis, assistant resident manager at West Linn; Clarence Bruner, management consultant for entire Crown organization; Leonard Ziel, resident manager at Port Townsend; Norman Lewthwaite, assistant resident manager at Port Townsend; Malcolm Otis, resident manager at Port Angeles; Charles Grondona, assistant resident manager at Camas, Wash., and George Gallaway, acting resident manager at Lebanon, Ore.

On April 7, a short time later, Guy V. Emerson was named pulp mill superintendent at Port Townsend, succeeding Mr. Lewthwaite in that position. Mr. Emerson, a Minnesotan, was with M & O Paper Co. before going to Port Townsend in 1928.

Mr. Erickson will not officially leave Port Townsend until July. But between now and then, he is expected to spend considerable time in California.

So much attention was given to all this shifting about of operations executives in the organization that it was almost lost sight of that a great papermaking tradition in England and the United States of the famous Lewthwaite family received reflected honor in the awarding of a 30-year service pin to the new Port Townsend assistant manager. A 25-year pin went to Edward G. Butler.



**REED O. HUNT**, who has been appointed Assistant Manager of Manufacturing, Crown Zellerbach Corp., with offices in San Francisco. Mr. Hunt has been with the company since 1927, starting in the Port Angeles, Wash., newsprint mill. In his present position, he serves under Vice President Albert Bankus.

Mr. Erickson, who had been manager at the Port Townsend kraft mill since 1932 and who had been at Port Angeles, Camas and Ocean Falls mills in the six years prior to that, will work with engineers on the new mill till July. After that date he will devote full time to construction and operation supervision.

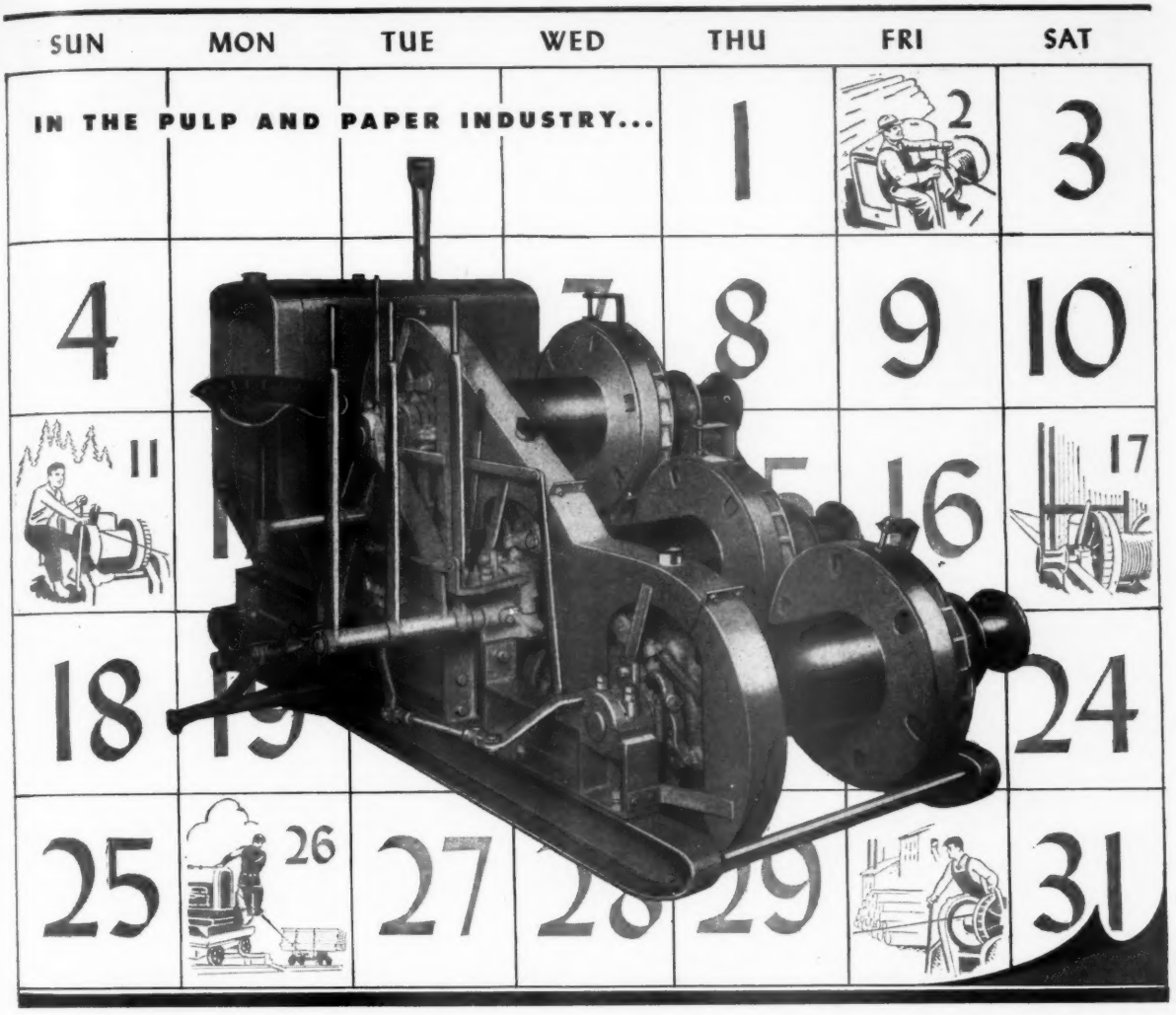
Leo Ziel, his successor at Port Townsend, is a former All-Coast football backfield star, having played for the University of Washington a score of years ago. He was a high school teacher and coach at Port Townsend when he joined the new mill organization there in 1928 as construction engineer. He became assistant manager in 1938, after being technical supervisor and later personnel supervisor.

Mr. Lewthwaite joined Pacific Mills at Ocean Falls, B. C., in 1916 and since then has had a broad career with the company, going to Port Townsend in 1928 as pulp mill superintendent and serving during the war in charge of activated charcoal plant operated in Seattle for chemical warfare products.

Mr. Bruner, relinquishing active management at West Linn after 49 years at that historic mill, takes on much broader duties. He began at West Linn as an errand boy. He has recovered in fine shape from an illness of a year, about the first and only real illness of his entire life, and will now serve in consulting capacity.

Peter Sinclair, former resident manager at the Carthage, N. Y.,tissue mill, who spent the past two years or more learning the modern on-the-machine paper coating techniques, returns to his former capacity as a manager. He was assistant manager at West Linn during the educational period in which he has speedily made himself one of the outstanding men in this field of production. West Linn expects to start making coated paper for Time-Life and for Curtis Publishing Co. in July and has plans for two machines for this production.

Mr. Dupuis, whose managerial experience heretofore has been in




*There's never an idle day for...* **American General Purpose Hoists**

● In today's big job of converting standing timber into pulp and paper, rugged and versatile AMERICAN General Purpose Hoists are helping every step of the way . . . every hour of every day. Helping in the forest, they provide smooth, fast performance in car loading work . . . handle dragline jobs . . . rake down stockpiles . . . and serve in many other ways. At the mills they handle scores of hauling, hoisting, elevating jobs. AMERICAN General Purpose Hoists are built in five sizes, for 2500 to 10,000 lb. (single line) loads. They're compact, powerful, dependable, portable. Available with single, double or triple drums. Ask your distributor for specific, profit-making facts!

*Plant No. 2*
So. Kearny, New Jersey

*Sales Offices:*
Chicago • Pittsburgh
New York • New Orleans
San Francisco

# American Hoist
## and DERRICK COMPANY

St. Paul 1, Minnesota

946



PETER T. SINCLAIR, promoted to Resident Manager of Crown Zellerbach Corp. mill in West Linn. He was formerly Asst. Mgr., and prior to that was Mgr. of Carthage, N. Y., mill. Picture taken by PULP & PAPER INDUSTRY when "Pete" was studying modern coated paper production methods in Wisconsin.

the newsprint mill at Port Angeles, will have an opportunity to become a key executive in the important and booming field of coated book and magazine paper production in making his move to the big West Linn mill. With virtually every U. S. mill which has facilities putting in machine coating, Mr. Dupuis will gain experience in coated and specialty paper grades.

Mr. Otis, who succeeds Mr. Dupuis at Port Angeles, one of the few mills in America where the much sought-after newsprint is economically a practical product, has had wide experience in several mills. He is a U. of Washington alumnus.

Mr. Gallaway, Coast chairman of TAPPI and former assistant to the paper mill superintendent at Camas, will go to Lebanon as acting manager. He has been particularly active in the specialty paper mill at Camas where he was formerly technical director. We had previously reported the move of Mr. Grondona from the New York office of Crown Zellerbach to be one of the three assistant resident managers at the big Camas mill. He formerly managed the Carthage tissue mill.

The new facial tissue machine at Camas started up about a month ago.

Mr. Hunt, who has had varied experience in the mills, has been an assistant to Albert Bankus, vice president in charge of engineering for some time. His duties are in connection with primary pulp and paper manufacturing.

GUY V. EMERSON, appointed Pulp Mill Superintendent, Crown Z Port Townsend, Wash., division. Born in Hanley Falls, Minn., Mr. Emerson was sulfate cook at M & O, International Falls, Minn., from 1920 to 1928, when he moved to Port Townsend and became shift foreman at start-up of the new mill. In 1943, he was made Acting Supt., when Norman Lewthwaite moved to Seattle to direct the wartime charcoal plant division. In late 1944 Mr. Lewthwaite returned.



### *Wood Until 1990 A. D.*

Col. A. R. Heron, Crown Zellerbach vice president told the Port Townsend "pin" diners that the paper industry can now see its way clear through sustained yield to operate until 1990, and if it can survive through the difficult decade from 1990 to 2000 it will be on a program of sustained yield forever.

"Crown Zellerbach could cut much more timber, produce more paper and make more money in the present shortage, but this is not being done," Col. Heron said. "We are not looking to this year's profits but to the future."

Col. Heron said the organization now is taking money out of the profit column and "plowing it back" in its sustained yield program. Tree farms have planted 900,000 seedlings, another 90,000 young trees are being given free to farmers for developing wood lots, and the company is sowing millions of seeds by airplane.

Mr. Zellerbach devoted his remarks to sustained yield of personnel, asking: "What good is a mill without personnel to operate it?"

He spoke of an industry's job of developing young men and women into worthwhile members of their community.



RAY DUPUIS, new Assistant Manager at Crown Z's big West Linn, Ore., mill which will soon become one of the nation's important machine-coated maagzine and book paper producers.

## Mill Print, Inc., Plant Starts Up On Columbia

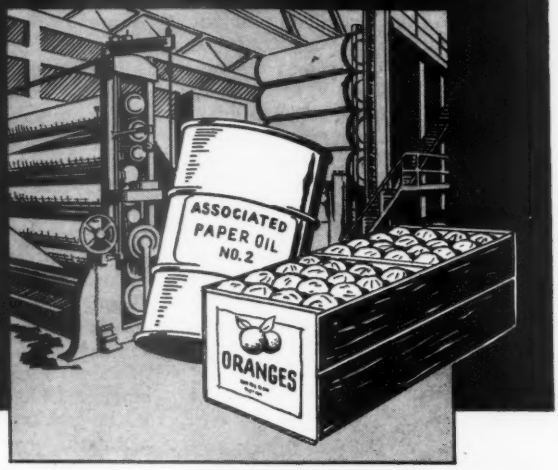
The new No. 9 plant of Mill Print, Inc., at Vancouver, Wash., went into original production the middle of April making waxed potato chip bags, starting at 100,000 bags per day.

Among the executives at the new plant are C. A. Westberg, Jr., manager; C. A. Westberg, Sr., in charge of office personnel; and A. D. Barbur, in charge of the sales organization.

MALCOM J. OTIS, new Resident Manager of Crown Zellerbach newsprint mill in Port Angeles, Wash. Long planned wood room improvements will be carried out there under his direction. Mr. Otis graduated from U. of Washington after World War I army interlude and went immediately into Crown Z organization, making rounds of mills and working in San Francisco headquarters before becoming recent Manager at Lebanon mill.



# for fruit wraps meeting highest requirements




## Associated #1 and #2 Paper Oils

As normal competitive market conditions return, wraps of quality visibly comparable to that of the fruits they protect again become a "must." The character, purity and handling facility of Associated Paper Oils make it possible to produce such wraps with ease, speed and economy. Associated No. 1 Paper Oil is a U.S.P. product for edible rind fruit wraps of the finest grades. No. 2 meets highest requirements for citrus wraps and comparable papers. Both are packaged exclusively in contamination-proof containers, completely sealed at the refinery. Telephone for price or delivery.



*Call your Associated Representative for expert help on any lubrication problem.*

*Tell Your Associated Dealer You Want a National Credit Card*

TIDE WATER ASSOCIATED OIL COMPANY

# High Cost of Waste Paper and Cotton Rags—Dealers Object to "Non-Professional" Collectors

Increasing costs of operation for paper mills is revealed in the rising prices for rags and waste paper.

Waste paper prices have doubled since pre-war; cotton rags are 60% above old OPA ceiling.

Waste paper, which in the five years prior to the war sold under $10 a ton in 55 out of 60 months, was recently quoted over $20 a ton for mixed lots in New York and higher in Chicago. Old newspapers sell at $30 a ton and white envelope cuttings bring $125 a ton in Chicago. Prices as high as $200 a ton for certain grades have been paid on occasion by paper mills short of pulp.

And the outlook, according to most trade authorities, is for a continuation of high prices, at least for most of this year. Normally, at this time of year the beginning of open water shipments of Scandinavian pulp has a softening effect on old paper prices. But these shipments are light. Daily Mill Stock Reporter and the Waste Trade Journal caution their readers who scan long columns of quotations that because of the uncertainties existing since price decontrol, price lists should be regarded as "largely nominal."

Problems and prospects of the industry were discussed at the 34th annual meeting of the National Association of Waste Material Dealers in Chicago recently.

A few sore spots were touched lightly. The competition of charitable organizations in the gathering of lucrative scrap paper has proved nettlesome to dealers in some communities.

In Seattle, they complain, such an organization has set up a $20,000 fund to back its own collectors and is selling direct to the paper mills, which the dealers feel is a violation of "ethics." This problem, however, has been met in most communities through cooperation with the charitable agencies. In Pittsburgh, for example, scrap dealers have organized Boy Scout collection drives, netting some troops as much as $1,000 a year and yet providing a satisfactory profit to the professional collectors.

Door to door collections, though highly publicized especially during the war, are of minor importance compared to the huge amounts dealers buy from office buildings and industrial concerns. From the big Chicago Board of Trade Building, for example, is harvested almost a ton of scrap paper a day, while Marshall Field & Co.'s State Street store in Chicago has sold 2,638 tons in the last 12 months, about 220 tons a month.

Last year, paper mills used 7,340,000 bales of waste paper (a bale weighs a ton) in turning out a little over 19 million tons of paper. This compares with only 4½ million tons of old paper used in 1940.

So far in 1947, consumption of old paper is running about 18% over last year and conservative estimates by mill men, themselves, put use at 7½ million tons as paper production is scheduled to rise over 20 million tons.

In the fine paper industry, difficulties have set in as a result of the decline of King Cotton and the use of hundreds of new synthetic resins in shirtings and cloth manufacture.



**CLAUD CHRISTIANSEN. Pulp Mill Superintendent at St. Marys Kraft Corp.'s mill at St. Marys, Ga. Mr. Christiansen started with Crown-Zellerbach at Camas, Wash., in 1935. After 5½ years in Technical Department there he went to St. Regis, at Tacoma, Wash., as Assistant Chief Chemist. He rose to Shift Superintendent. He left for St. Marys Jan. 1, to fill post made vacant by death last September of V. E. Kirby.**

## Owen, From Southern Mills, Joins Fernstrom

L. B. Owen, active in papermaking in the South for years, has joined Fernstrom Paper Mills, Pomona, Calif., as assistant to the mill superintendent, acting as specialist in paper machine operation. Mr. Owen was formerly employed variously at Ecusta Paper Corp., Brevard, N. C., Brown Paper Mills Co., of Monroe, La., and Crossett Paper Mill of Crossett, Ark. He is now making his home at 565 East 12th. st., Pomona.



**CLYDE W. KING who has been appointed Manager of Industrial and Public Relations Department of Fibreboard Products Inc., with headquarters in San Francisco. Mr. King enlisted in the Navy in 1917 and won an appointment to Annapolis, graduating in 1922, with the Navy then being held down by economy policies, Mr. King resigned and came West to enter production department of Illinois Pacific Glass Co. In 1933 he joined Long Beach Glass Co., fore-runner of Glass Containers Inc., purchased by Fibreboard in 1936. Mr. King was District Sales Manager until Dec. 7, 1941, when called to active duty as a reserve officer. He entered development of naval aviation training, later became commanding officer of St. Mary's pre-flight school and when war ended held rank of Captain.**

## Mellon Institute Research Is Broadened

Director E. R. Weidlein of Mellon Institute, Pittsburgh, recently reported to institute trustees that the multiple fellowship of the pulp and paper industry's National Council for Stream Improvement has been broadened to embrace not only researches on deinking wastes but also on waste liquors from cooking and pulping in flax, spent acid and alkaline bleach liquors, and some general composite mixed pulp and paper-mill plant effluents.

The investigations have included ascertaining the physical and chemical properties of the different types of liquid wastes as well as methods for treatment and disposal so as to abate stream pollution.

## Canadian Newsprint Boosted to $90

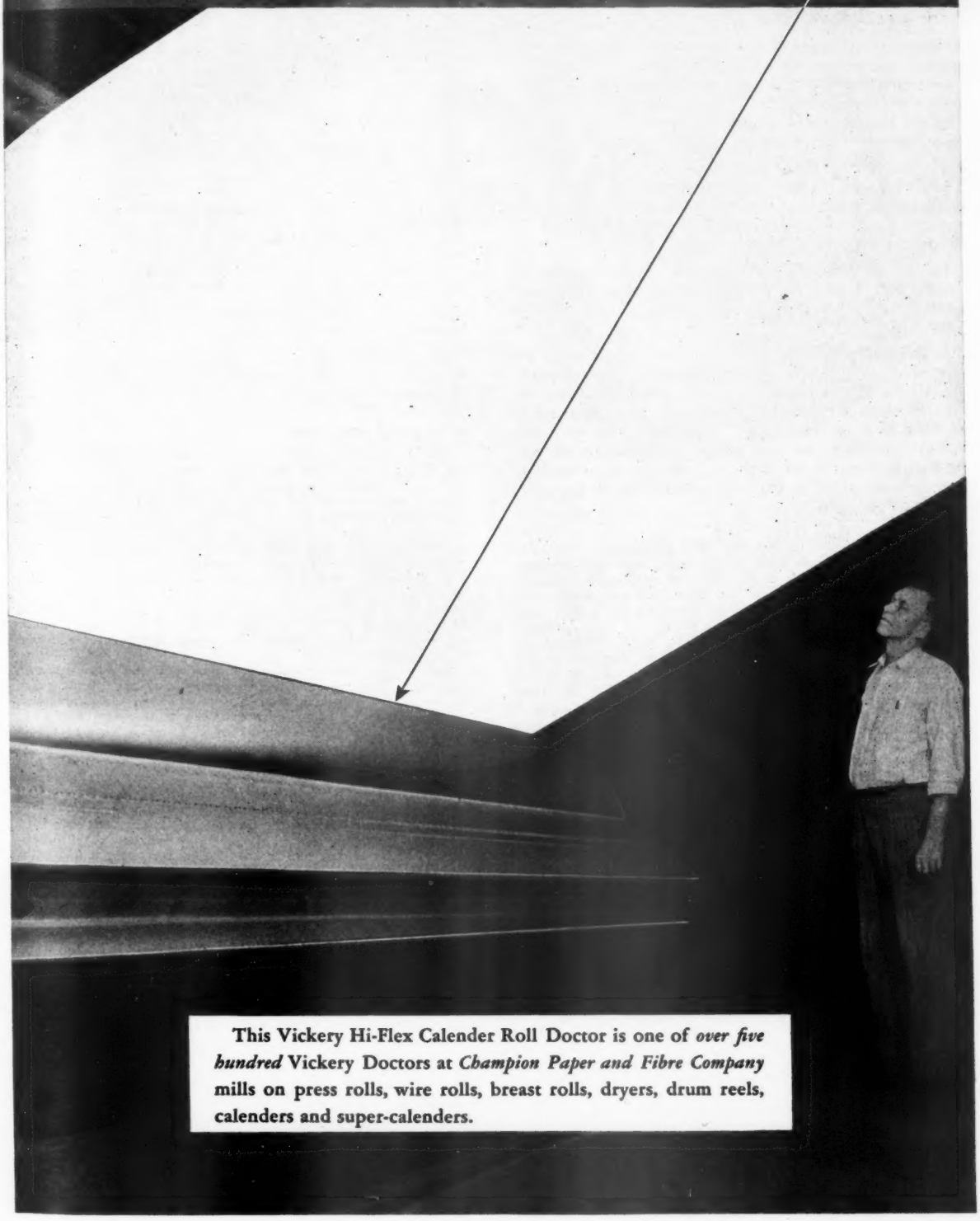
Several Canadian companies increased their selling price for newsprint late in March by $6 a ton, effective April 1, thereby establishing a base price of $90 a ton for standard newsprint.

Powell River Co. was the first west coast company to announce an increase, several days after Canadian International Paper Co. and Abitibi Power & Paper Co. had boosted the price $6 a ton.

# VICKERY DOCTORED ROLLS

like this shining 20 ft. calender roll, produce more and better paper at lower cost.

For layouts and estimates on carefully engineered Vickery Doctors for any or every roll in your machine room, get in touch with *Bird Machine Company, South Walpole, Massachusetts*



**This Vickery Hi-Flex Calender Roll Doctor is one of *over five hundred* Vickery Doctors at *Champion Paper and Fibre Company* mills on press rolls, wire rolls, breast rolls, dryers, drum reels, calenders and super-calenders.**

# MEASUREMENT AND CONTROL OF pH IN PULP AND PAPER MILLS

By J. B. Chandler

**Pulp and Paper Mill Engineer, The Bristol Co., Waterbury, Conn.**

EDITOR'S NOTE—Management executives and directors in all fields of this industry are watching with interest the trends toward "push button" operation and more scientific control of pulp and paper making. Instruments and meters which effect improvements of quality and savings of materials and costs are being installed in various phases of mill operation.

The author of this paper, presented at the Mar. 11 TAPPI meeting in Bellingham, Wash., has had an unusual opportunity to observe this trend—in fact, to take an active role of leadership in it himself—because he covers the continent for The Bristol Company.

He spends most of his time in the South but recently completed a tour of Pacific Northwest mills. His headquarters are Waterbury, Conn., although he lives in Atlanta, Ga.

In this paper he gives a clear picture of just what pH represents and clears up some misconceptions regarding pH meter terminology. He then describes uses for the Beckman Control Instrument in water treatment, washing of pulp, bleaching, continuous control of alum to paper machine furnish, white water treatment, etc. Its economic value for high wet strength papermaking is noted and uses in corrosive situations in the mills is mentioned.

This subject could be the title of a voluminous textbook. Unfortunately, no such book is available, and the information is scattered around in the files of interested technical men. It is difficult to decide just what to cover, which will be of value to chemists as well as operating men. However, from my experience in talking with paper mill men throughout the country I see a definite need for a definition of terms, so that we may be on common ground in regard to the fundamentals of the subject, before going into the actual applications. So I will start by answering the question, "What is pH?"

### What Is pH?

When an acid or a base is dissolved in water it disosciates to form positive and negative ions, according to Arrhenius' hypothesis. The strength of the acid or the base, is directly proportional to the concentration of hydrogen ions ($H+$) given up during the process or dissociation. Therefore, by measuring the ion concentration, the effective power of the acid or base can be determined. This value then becomes an index to the operation of a process and the chemical reactions involved, and it further becomes a means for maintaining certain conditions in the process which have been found to give maximum product yield and efficiency of operation.

We are now ready to meet the term "pH" head on. pH is a symbol universally used to express a condition and its degree of acidity or alkalinity. The symbol is derived by taking "p" from the word power and using the chemical symbol "H" for hydrogen. Literally then, pH expresses the power of the hydrogen ion, and the numerical values of the pH scale expresses the concentration of free hydrogen ions. These values are obtained from the mathematical equation : $pH = \log \frac{1}{H+}$ in which pH equals the logarithm of the reciprocal of hydrogen ion concentration. This gives pH values in whole numbers and provides a more useable and convenient form of expression than either the exponential or fractional forms. This is immediately apparent from the comparisons of the various ways of expressing hydrogen ion concentrations shown in Figure 1.

The pH scale range of 0 to 14 represents, for all practical purposes, the maximum and minimum concentration of hydrogen ions.

You are all familiar with the fact that pure water at 25°C. is considered to be neutral and in this respect it becomes the dividing point on the pH scale between an acid and base condition. Water is not used merely for convenience as might be suspected, but its use is based on the fact that it is the only substance which dissociates into exactly equal amounts of hydrogen and hydroxyl ions at 25°C. Under these conditions, there is neither an excess nor a deficiency of either ion. Therefore, it is a truly neutral solution.

Again referring to Figure 1, pH values from 7.0 to 0.0 represent increasing degrees of acidity and values from 7.0 to 14.0 increasing degrees of basicity. It should be remembered, however, that since the pH scale is a logarithmic function, the degree of acidity or alkalinity expressed varies by the power of 10 rather than as a linear variation. For example, a solution of pH 4.0 is 10 times more acid than a solution of pH 5.0 and 100 times more acid than a solution of pH 6.0. This should be carefully considered when establishing the accuracy of determination which is being set up for a particular process.

The use of the pH symbol and development of the equation to express pH in whole numbers was conceived by the Swedish chemist, S. P. L. Sorenson, and first introduced for general use in 1909

### How pH Is Measured

PH is commonly measured today by two methods—chemical (colorimetric) and electrical (electrometric).

The colorimetric method is based on the principle of color changes in an indicator when solutions having different pH values are added to it. The indicators are organic dye stuffs, especially prepared for this type of measurement. Each indicator has a definite color change over its useful pH range, which is approximately 1.6 pH units.

To make the actual pH measurement, the indicator is added to a sample of the solution to be measured. The indicator will change to a definite color according to the pH of the solution. This change is determined in terms of pH by visual comparison of the sample solution with standardized color solutions of known pH values.

Most of you are probably familiar with the more common indicators used in colorimetric determinations. Litmus paper is one of the most common, but is practical only for rough measurements in that it covers such a wide range, being red at 4.5 pH (denoting acid) and blue at 8.3 pH (denoting a base condition). Other common indicators in liquid form are methyl red (range 4.4-6.0 pH) bromthymol blue (6.0-7.6 pH) and thymol blue (8.0-9.6 pH).

The hydrogen gas electrode is considered as the standard measurement. By comparison with this standard, colorimetric determinations have been observed to have certain errors, the most important being temperature, salt and acid errors. Many people do not realize that for correct results, pH color standards should always be used at the temperature at which they were standardized. An increase in temperature usually causes an increase in ionization. The best example of this is the variation of the neutral point of water. As we said before, at 25°C the pH of water is 7.0. However at 0°C the pH value is 7.47 and at 100°C the pH is 6.12.

The other error which I find to be most prevelant is that due to the buffer capacity of the solution to be measured. I have seen samples of city water which was very slightly buffered tested with a colorimetric indicator. The mere addition of the indicator changed the actual pH of the sample by 0.6 and, of course, gave an erronius colorimetric reading.

The colorimetric method is applicable for grab sample measurements and spot checks where a high degree of accuracy is not involved. The human element is a factor in this method, since the accurate visual matching of colors depends to a considerable extent on the ability and experience of the operator. Additional important factors in obtaining reasonably accurate and reproducible results is using fresh sample kept out of contact with air, correct preparation of the sample and the selection of an indicator with a suitable range.

In discussing the electrometric method of measuring pH, you will recall that when an acid or a base is dissolved in water.



# IT'S NO SECRET

## that BLAW-KNOX PULPWOOD GRAPPLES are preferred by V.I.P.*

***Blaw-Knox Pulpwood Grapples help fight the Battle of Production for:—***

Abitibi Power & Paper Co. . . . . Sault Ste. Marie, Ontario, Can.
Armstrong Cork Company . . . . . Macon, Ga.
Badger Paper Mills, Inc. . . . . Peshtigo, Wis.
Blandin Paper Company . . . . . Grand Rapids, Minn.
Brown Corporation . . . . . Sanmaur, Quebec, Can.
Brunswick Pulp & Paper Company . . . . . Brunswick, Ga.
Champion Paper & Fiber Company . . . . . Canton, N. C.
Chesapeake Camp Corporation . . . . . Franklin, Va.
Chesapeake Corporation . . . . . West Point, Va.
Consolidated Water Power & Paper Co. . Mead, Ontario, Can.
Consolidated Water Power & Paper Co. . . . . Rhinelander, Wis.
Consolidated Water Power & Paper Co. . Wisconsin Rapids, Wis.
Container Corporation of America . . . . . Fernandina, Fla.
Everett Pulp & Paper Company . . . . . Everett, Wash.
Filer Fibre Company . . . . . Filer City, Mich.
Flambeau Paper Mill Company . . . . . Park Falls, Wis.
Gaylord Container Corporation . . . . . Bogalusa, La.
Gulf States Paper Corp. . . . . Tuscaloosa, Ala.
Hoberg Paper Mills . . . . . Green Bay, Wis.
Hollingsworth & Whitney . . . . . Birmingham, Ala.
Hudson Pulp & Paper Company . . . . . Palatka, Fla.
Hummel-Ross Fibre Corp. . . . . Hopewell, Va.
F. Hurlbut Company . . . . . Green Bay, Wis.
International Paper Company . . . . . Camden, Ark.
Kieckhefer Container Company . . . . . Plymouth, N. C.
Kimberly Clark Company . . . . . Kimberly, Wis.
Kimberly Clark Corporation . . . . . Neenah, Wis.
Kimberly Clark Corporation . . . . . Niagara, Wis.
Longview Fibre Company . . . . . Longview, Wash.
Marathon Paper Mills Company . . . . . Rothschild, Wis.
The Mead Corporation . . . . . Chillicothe, O.
Minnesota & Ontario Paper Company . International Falls, Minn
Mossinee Paper Mills Company . . . . . Mossinee, Wis.
Nekoosa-Edwards Paper Company . . . . . Nekoosa, Wis.
Nekoosa-Edwards Paper Company . . . . . Port Edward, Wis.

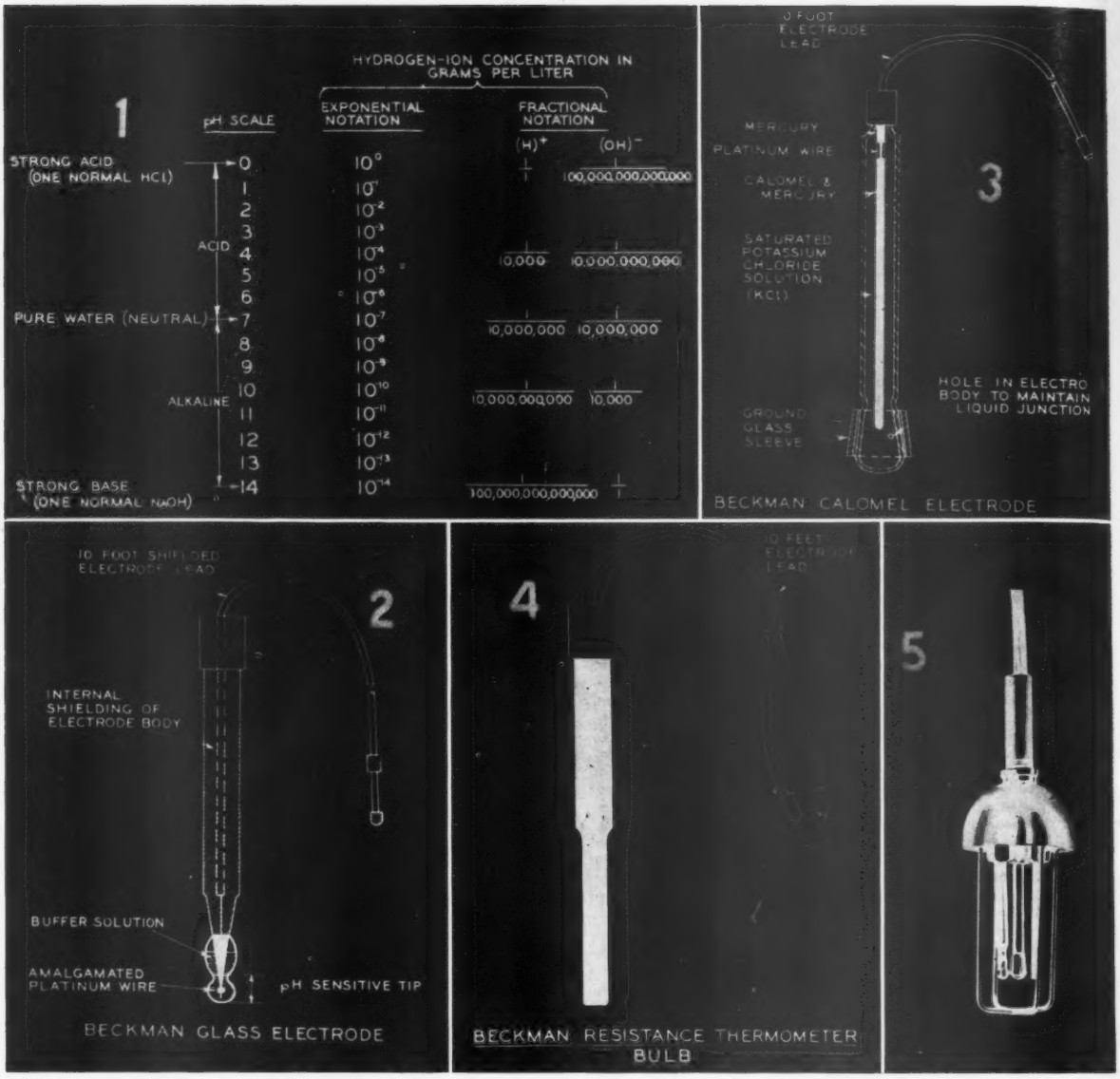
*VERY IMPORTANT PEOPLE

North Carolina Pulp Company . . . . . Plymouth, N. C.
The Northwest Paper Company . . . . . Cloquet, Minn.
Ontario-Minnesota Pulp & Paper Co., Ltd. . . . . Kenora, Ontario
Puget Sound Pulp & Timber Co. . . . . Bellingham, Wash.
Rayonier, Inc. . . . . Fernandina, Fla.
Rayonier, Inc. . . . . Hoquiam, Wash.
Rhinelander Paper Company . . . . . Rhinelander, Wis.
Richmond Cedar Works . . . . . Norfolk, Va.
Roddis Lumber and Veneer Co. . . . . Marshfield, Wis.
St. Joe Paper Company . . . . . Port St. Joe, Fla.
St. Regis Paper Company . . . . . Tacoma, Wash.
Southern Johns-Manville Products Corp. . . . . Natchez, Miss.
Southern Kraft Division . . . . . Bastrop, La.
Southern Kraft Corp. . . . . Panama City, Fla.
Southern Kraft Division . . . . . Georgetown, S. C.
Southland Paper Mill . . . . . Lufkin, Tex.
Soundview Pulp Company . . . . . Everett, Wash.
Union Bag and Paper Company . . . . . Savannah, Ga.
Wausau Paper Mills, Inc. . . . . Brokaw, Wis.
W. Va. Pulp & Paper Co. . . . . Charleston, S. C.
Yawkey-Bissell Corp. . . . . White Lake, Wis.

Perhaps you would like to know the reasons for this wide acceptance... Write today for Bulletin No. 2098.

**BLAW-KNOX DIVISION**
of Blaw-Knox Company
2059 FARMERS BANK BLDG. • PITTSBURGH 22, PA.
New York • Chicago • Philadelphia • Birmingham • Washington

# BLAW-KNOX PULPWOOD GRAPPLES




hydrogen ions carrying positive electrical charges are formed. Since a potential actually exists in the solution from the positive electrical charge carried by the hydrogen ions present, a definite e.m.f.-pH relationship exists and by measuring the electrical potential of the solution, the related pH value is immediately known.

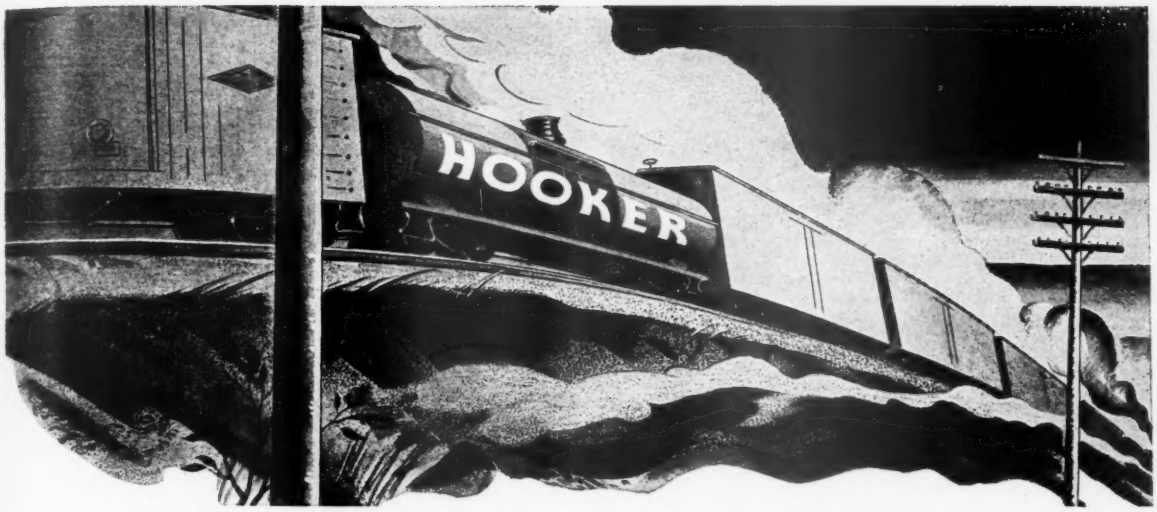
The electrometric measuring system is based on the functioning of an electrode cell consisting of a glass electrode, a calomel electrode and a resistance thermometer bulb. The heart of this cell is the glass electrode which has a long history of change and development in reaching its present form. The forerunner of the present day glass electrode was first the hydrogen electrode. This is still considered as a primary standard for accurate research and laboratory work, but is impractical for industrial plant use because it is poisoned by many substances, requires a continuous supply of pure hydrogen gas and its delicate construction makes it difficult to assemble and install. Next came the quinhydrone electrode which incorporated some advantages over this hydrogen electrode but was still susceptible to poisoning and was not practical in oxidizing and reducing solutions. The antimony electrode is of all metallic construction and sufficiently rugged for industrial use but is also easily poisioned and the calibration is not the same on static and flowing liquid. The present day glass electrode overcomes the disadvantages of the earlier electrode and has been developed to a high degree of reliability and ruggedness. It is suitable for use in oxidizing and reducing solutions, semi-solids, sludges, viscous, colored and turbid solutions, high alkaline solutions and is not poisioned by process solutions.

### *Glass Electrode*

The glass electrode (Fig. 2) is the measuring electrode and consists of a glass body with a special bulbous glass tip filled with a buffer solution of known and constant pH value. A platinum wire is immersed in the filling solution and connected to an insulated and shielded lead extending to the electrode head. The actual measuring part of the electrode is the bulb tip which is especially prepared on the electrode body so that the wall thickness comes within the desired limits of resistance for the measuring systems. In the Beckman glass electrode this value is not allowed to exceed 1000 megohms. It should be remembered that in it's role as a measuring electrode, the glass is a conductor and not an insulator as it is usually thought of in electrical measurements.

### *Calomel Electrodes*

The calomel electrode (Fig. 3) consists of a glass body containing a tube of calomel (mercurous chloride) surrounded by a saturated solution of potassium chloride (KCl). This is known as the reference electrode and is arbitrarily assigned a value of zero. Actually it has a known voltage which is .3358 volts at 25°C. This voltage remains constant even though the solution potential changes. (The solution potential is




# Liquid Chlorine Versus Bleaching Powder

ALTHOUGH bleaching powder was in regular use by pulp and paper makers for many years, it carried with it time consuming and costly difficulties. Bleaching powder was never stable in storage and when made into bleach liquor, it was difficult to get clear solutions and to eliminate sludge.

When liquid chlorine became readily and cheaply available, the old bleach powder methods could be discarded. Under the stimulus of production for World War I, electrolytic cell design improved, chlorine production increased and economical methods of liquifying and transporting were developed. Hooker engineers and chemists played an important part in this progress. They also helped specifically in the pulp and paper industry not only in improving bleaching techniques but in the designing of bleaching equipment.

Hooker technicians are constantly engaged in making available for you the high purity liquid chlorine and other Hooker chemicals you use. The results of their studies, too, are available in Hooker Technical Bulletins and cover a wide range of subjects of interest to pulp and paper makers. A list of the titles of these bulletins and copies of those you would like to have will be sent to you when requested on your letterhead.

**HOOKER ELECTROCHEMICAL COMPANY**
**2 UNION STREET, NIAGARA FALLS, N. Y.**
**New York, N.Y. Wilmington, Calif. Tacoma, Wash.**

**HOOKER CHEMICALS**

*From the salt of the earth*

2800 **Caustic Soda Muriatic Acid Sodium Sulfide Paradichlorbenzene Chlorine Sodium Sulfhydrate**

changed by temperature, the degree to which the substances in the solution dissociate to hydrogen ions and the addition of acid or alkaline reagents. A small hole in the electrode body is covered by a tapered glass sleeve which maintains a film of KCl on the outside of the electrode body and forms a liquid junction which is in contact with the solution being measured. The liquid junction provides an adequate path of electrical conductivity for completing the circuit between the glass and calomel electrode.

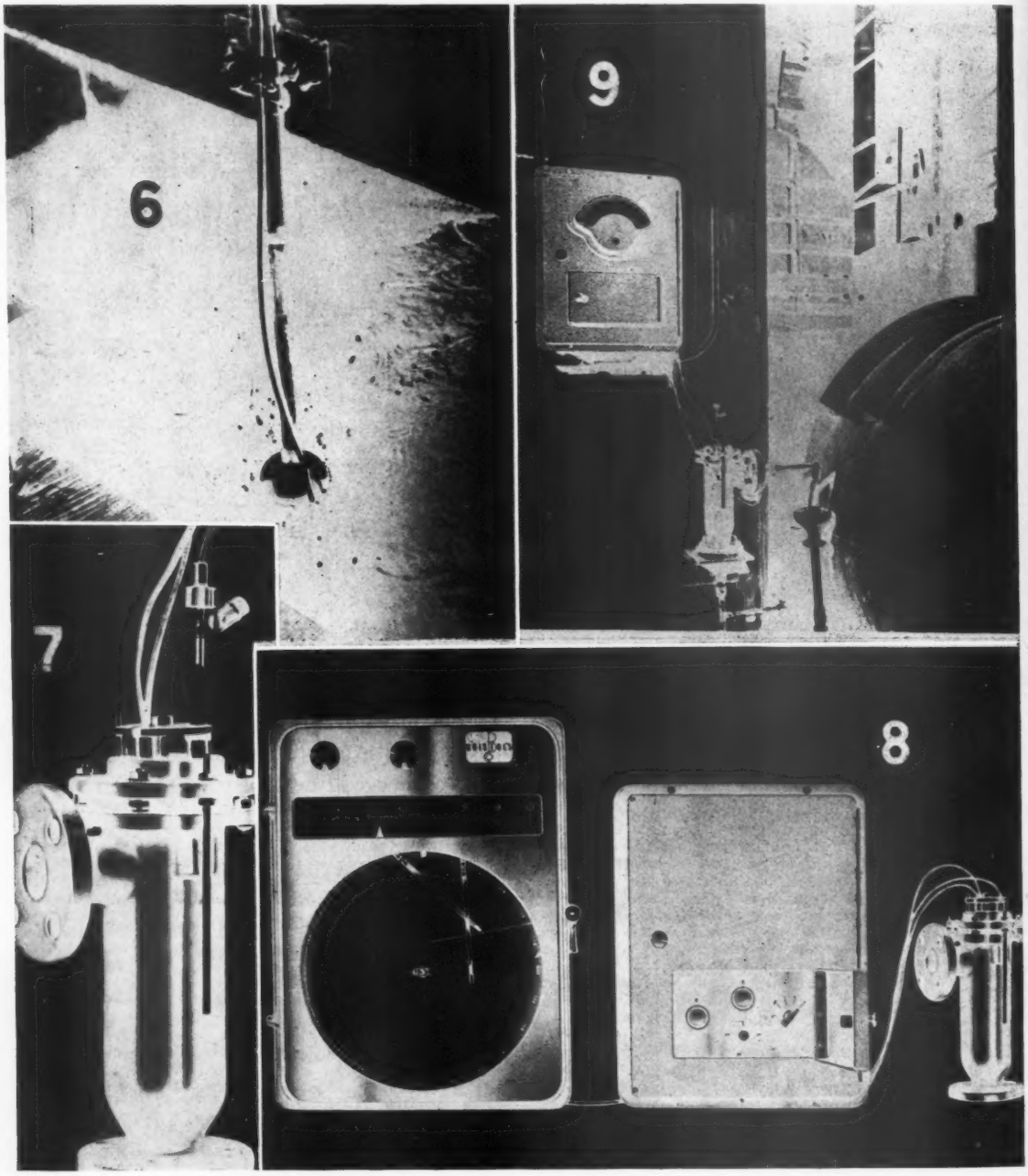
We have now a reference electrode which remains at a constant potential in respect to changes in the hydrogen-ion concentration and a measuring electrode containing a solution of known and constant pH separated from the solution of unknown pH by a thin glass membrane. A circuit is completed when these electrodes are immersed in the solution to measure it's pH. The potential measured is the algebraic sum of the two electrode potentials. Since one electrode potential is known (and fixed), the potential actually measured is the difference between the calomel electrode and the glass measuring electrode potential and this value is the solution potential which can be translated directly into a pH value.

The glass and calomel electrodes are connected to a OC null-balance voltage amplifier which in turn operates a recording potentiometer which gives a continuous record reading directly in terms of pH on a uniformly graduated chart.

Some conception of the operating conditions for the amplifier can be gained from the fact that in using the glass electrode, current values to be measured are in the nature of 10-13 amperes or one micro-micro ampere. This condition of measurement necessitates careful attention to shielding in the glass electrode body and lead connecting the electrode to the amplifier so that stray current effects and leakage will be kept to an absolute minimum.

### *Resistance Thermometer*

The third element in the electrode cell, the resistance thermometer bulb (Fig. 4) plays an important part in providing



# Sutherland

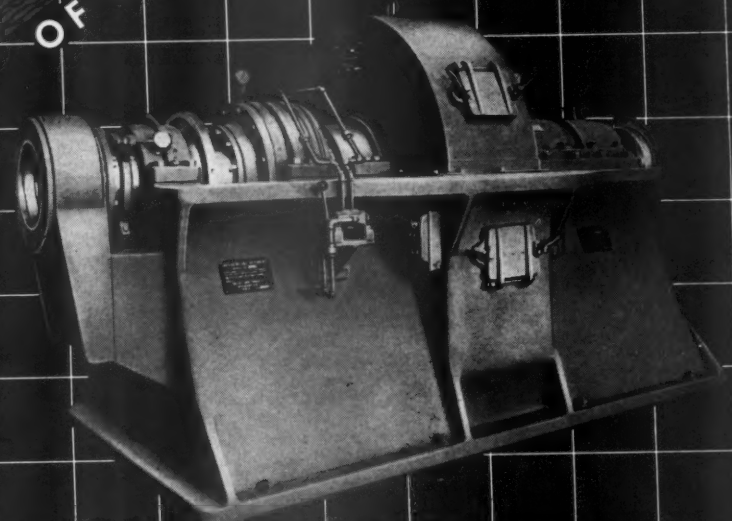
# HIGH YIELD

## SULPHATE PROCESS

MORE PULP PER POUND OF WOOD

MORE PULP PER POUND OF WOOD

MORE PULP PER POUND OF WO

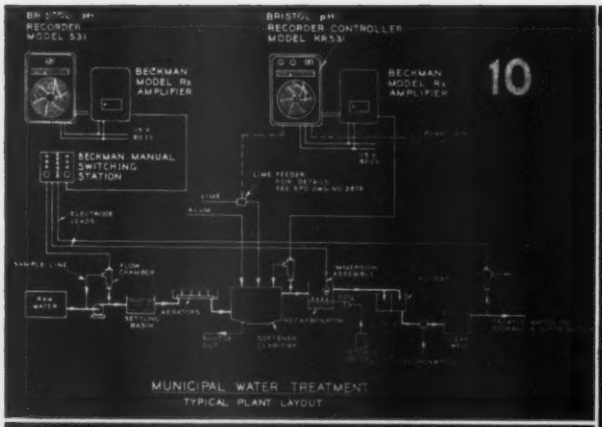


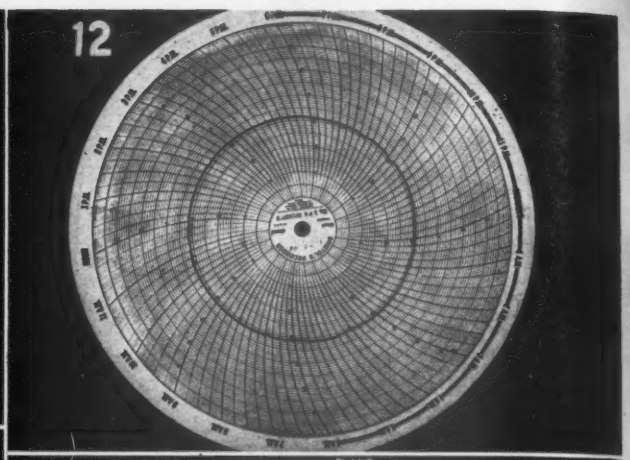
**SUTHERLAND** *continuous*
BEATING AND REFINING SYSTEM

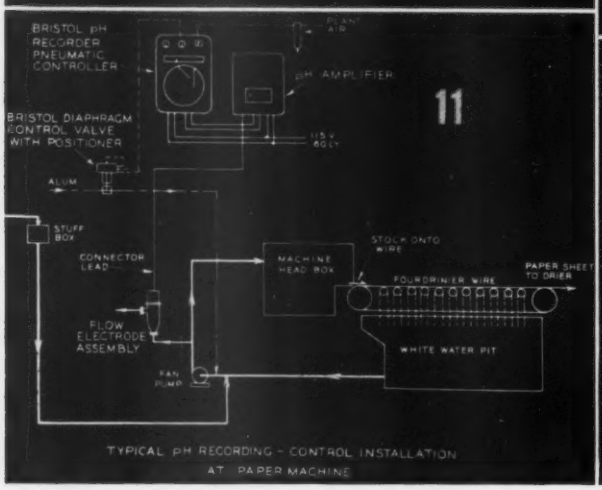
SUTHERLAND REFINER CORPORATION

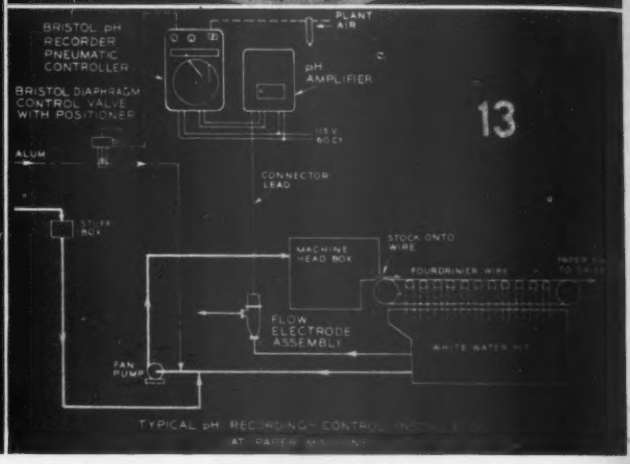
TRENTON, NEW JERSEY · *Manufactured in the United States by Valley Iron Works Co., Appleton, Wis.*

SUTHERLAND REFINER LIMITED, 319 DRUMMOND BLDG., MONTREAL P.Q., Manufactured in Canada by The John Bertram & Sons Co. Ltd., Dundas, Ontario




an accurate pH measurement even though it does not enter into the direct measurement of the solution potential.

The calomel electrode potential varies slightly with temperature changes. Likewise the internal assembly of the glass electrode and the buffer solution has a temperature coefficient. The resistance bulb is sensitive to temperature changes in the solution under measurment and is tied directly into the amplifier measuring circuit so that a temperature compensating correction is made instantaneously in the measuring circuit and the resultant pH value on the recorder is correct for temperature variations in the solution. The characteristics of the Beckman glass electrode system have been carefully determined so that the temperature coefficient for the glass and calomel electrode is zero at 7.0 pH. By having zero coefficient come at the middle of the pH scale, the total temperature effect will be at a minimum for most pH measurements.

While I am on this subject, I will briefly cover the conditions which may be handled satisfactorily by the various electrode assemblies. The immersion assembly (Fig. 5) is a water-tight stainless steel unit, which may be attached to a standard ¾" pipe and immersed in liquid to any reasonable depth (Fig. 6). Normally the electrodes are protected by two heavy wire guards, but they may be furnished with a perforated shield for very turbulent conditions. This unit is suitable for service in stock chests, open flumes, and headboxes. The flow assembly (Fig. 7) is a rugged porcelain covered casting which is inserted in a pipeline, usually carrying a sample of the liquid to be measured. The electrodes are easily removed for cleaning, and the complete assembly will withstand pressure to 30 psi. The pipe flanges are 1¼" size, but a flow as low as 1 gallon per minute is sufficient. This unit is recommended for taking samples of condensate, white water, or stock from the fan pump.

The electrodes themselves may be furnished to withstand the following extremes:

Temperatures as high as 100°C
Temperatures as low as 0°C
High sodium ion concentrations—pH values over 9
Extremely abrasive conditions.

The basic components of a pH measuring system, electrodes, amplifier and controller are shown in Figure 8. The next picture (Fig. 9) gives an idea of the flexibility which is now available in pH installations. A flow assembly is connected by 5 wire shielded cables, directly to an indicating amplifier. This may be located where the operator may observe it conveniently. Then the recorder or controller may be at any remote location up to 1000 ft., connected by two copper wires.

## PULP AND PAPER APPLICATIONS

Now that we have reached a common understanding of the fundamentals of the subject, we are prepared to examine the various processes in the pulp and paper mill in which the measurement of pH is of interest.

The first item that comes to mind is water, without which we would have no paper mills. The water treatment field was the first one to be aided by the continuous measurement of pH, and this is only natural, as water offers ideal conditions for the electrodes. We find by experience that electrodes have remained in water for weeks at a time without the necessity for cleaning.

Water treatment is a subject in itself, so I will briefly discuss the points in which water plants rely on pH recording and control. In soft water areas (Fig. 10), where only flocculation is necessary, pH controllers are being adapted to automatically control the addition of alum, to insure optimum settling conditions. After the water has been settled and filtered, automatic pH control again comes into use. More and more plants which add lime or soda ash for corrosion control, are using pH controllers to change the setting of a dry feeder or to operate a valve in a liquid feed line. The results of course are a uniform effluent with a minimum of chemical cost.

In the hard water areas we have a reversal of conditions. After the softening process the pH is usually too high. Again the automatic controller can operate a butterfly valve in a $CO_2$ line to reduce the pH to its desired value.

While we are on the subject of water, I will mention condensate contamination. Since the development of the indirect

# *Modern methods* conserve forest resources



Hydraulic barking and whole-log chipping plant of Puget Sound Pulp & Timber Co., which, by avoiding wood waste, permits producing about 17% more wood pulp from logs than by former process.



After the bark has been removed by water power shot at 1,300 pounds pressure . . . .



. . . . a log 40 inches in diameter is reduced to chips in a swift operation.

## PUGET SOUND PULP & TIMBER CO.

*Bellingham, Washington*

steamed digester, as well as the multiple effect evaporator, mills have been faced with the problem of leaky tubes causing contamination of boiler feed water with black liquor or sulfite acid. Several of the newer mills are using pH controllers to check the condensate from heaters and evaporators, and operate by-pass valves when a tube starts to leak. Inasmuch as electrodes have been developed which will withstand temperatures up to 212°F, it is only necessary to flash a small sample and pass it through a flow assembly.

### *Pulp Washing*

Another problem in the pulp mill, of particular importance to kraft mills, is that of efficient washing. Whether by diffusers or by the modern rotary washers, the main object is to produce clean pulp. Residual soda in the pulp is, of course, lost to recovery. However, it can be costly in other ways. In a mill which does no bleaching, the liquor remaining in the pulp may cause foam on the machine. It is the practice in a number of mills to use kerosene to eliminate this. Where a bleach plant follows the washing system, an excess of liquor in the pulp can be more costly, by causing a higher chlorine consumption.

Several mills are using continuous pH records as a means of checking the efficiency of the washers. Immersion type electrodes are placed in the flow of stock to the knotters, and the recorder is located in the wash room, as a guide for the operator. After making such an installation, one mill reported that they were able to drop the pH of the washed stock from 11 to 10, with a marked decrease in foam on the machine. Although I do not know of any existing installations, I should think, that such an application could be of value in sulfite mills, particularly where continuous washers are employed.

### *Bleach Plant*

In a pulp mill, the bleach plant has probably the greatest potential demand for the benefits offered by continuous pH measurement. However, due to the inaccessibility of some of the sampling points, as well as the high consistencies involved, the work in this field has been limited. New designs in electrode assemblies should help to overcome the major disadvantages.

The first application in bleaching is in the production of calcium bleach liquor. It is common practice to circulate milk of lime while adding $Cl_2$ to obtain bleach liquor of definite strength. This is normally checked by titration, or by a phenolphthalein flash test. The first takes time, and the second is only a rough check. If a portion of the liquor is passed through an electrode assembly, the pH may be continuously checked and the chlorination stopped at the optimum valve, resulting in:

1. A more uniform liquor
2. Less sludge
3. A more closely controlled alkalinity, important if no buffer is used.

In chlorination stages, it may be feasible to provide for a continuous record of pH as a check on operation. However, to my knowledge, there have been no attempts to regulate chlorination automatically by pH. The high density hypochlorite stages, both in kraft and sulfate pulping, offer the greatest need for continuous pH measurement. Low pH values may cause degradation of fibers as well as low color. In kraft bleaching it is common practice to add NaOH to buffer the bleaching reaction. If too much NaOH is added, the bleaching rate may be retarded more than is desired. A continuous pH controller, measuring the pulp from a high density mixer and controlling the NaOH added would be of value in producing uniform pulp. However, the problem of sampling is still unsolved. Various attempts have been made at watering the high density stock in Bellmer bleachers, and measuring the pH of the liquor. However, these attempts have not been commercially successful.

At the present time, a number of mills have installed equipment for measuring and controlling the pH in the final stage of kraft bleach plants where $SO_2$ is added to prevent color reversion. This stage is satisfactory both from the standpoint of consistency and time lag. The reaction of stock with $SO^2$ is practically instantaneous, and is ecective in a 3.0% consistency. Therefore, a control circuit may be set up, with the pH controller operating a valve on the $SO_2$ or sulfite cooking acid.

The new process of groundwood bleaching with sodium peroxide also demands a neutralization stage using some material such as $SO_2$. It may be handled in much the same manner.

## *PAPER MACHINE pH CONTROL*

The last portion of my paper covers possibly the most important application of all, the addition of alum to paper machine furnish. Its importance lies in the fact that it is being applied to the finished product. The other applications which I have covered may be more important from the standpoint of chemical economy or uniformity of operation. However, the paper machine is the last point at which to correct previous errors.

The present importance of pH control at the machine is due to several factors: First, of course, is the swing to the continuous liquid alum system. Large tonnage mills have changed from beaters to continuous stock preparation systems. It has been found practical to add alum continuously at the fan pump and obtain the the same degree of sizing.

After this change another factor has come into the picture. Paper machine speeds have increased tremendously. Some of the newer ones are designed for 2,000 F.P.M. At these speeds closer control of all the variables is necessary. If pH or any other factor gets out of balance a larger tonnage will be affected before the error is rectified.

The third factor which has added to the importance of pH control is the introduction of wet strength papers. I do not believe that the actual pH of the furnish is more critical than with other papers. However, the cost of the resins is high, and a uniform pH results in the most efficient use of these resins.

The actual application of pH control to a machine can be accomplished in several ways. The most satisfactory from my observation is that shown in Figure 11. A sample of the actual furnish to the headbox is passed through the electrode assembly. A very small sample is sufficient, and this may be returned to the fan pump suction or to the wire pit. The pH is then measured and the controller operates a valve to add alum to the fan pump. The distance from the point of addition to the point of sampling should only be long enough to assure good mixing and completion of the reaction. The control system may be either electric or pneumatic depending on the desire of the Mill. Figure 12 is a chart record from a Northwestern mill showing the uniformity of control which may be expected.

Another popular variation of this scheme, is to sample the tray water rather than the furnish. (Fig. 13). I believe this plan was originated because of the mistaken idea that the electrodes would not stand-up in the pulp suspension. However, this arrangement adds unnecessary lag to the circuit, and does not respond as rapidly to changes in the furnish.

It is interesting to get the varied reactions of mill men regarding the advantages or savings which they have realized from an installation of this type. These can be summed up as:

1. Uniformity of operation
2. Uniformity of product
3. Chemical economy
4. Minimizing of corrosion
5. Permanent records.

While the savings in alum, reported in some mills to be as high as 5 and 10 cents per ton, is considered worthwhile, uniformity of operation is usually regarded as the greatest benefit. With a continuous chart record, the machine tender can no longer change the alum dosage at will. If he should have to change the control point, he will have to back this up with an explanation to the superintendent. While on the subject of charts, I should mention the historical advantages of having continuous chart records to refer to when duplicating grades.

Another advantage often overlooked is that the furnish can usually be run at a higher pH when automatically controlled. This results in a further saving in alum as well as less corrosion.

In setting up a paper machine pH control system, there are several points to anticipate which will eliminate troubles. The first and most important of these is to have the valve sized correctly. A throttling controller is only as good as its valve. Too often paper mills guess at their alum dosage when ordering a valve, and it turns out to be either too small or ten times too large. So, before ordering a valve, an accurate survey should be made to determine the maximum quantities to be handled.

Another point to consider is the strength of alum or acid. This cannot be rigidly specified as it depends on the quantity used. But if possible the strength should be adjusted to allow the use of a standard valve. Of course, the instrument companies can furnish valves with needle points to handle a few quarts an hour. However these are more subject to plugging and trouble. If a standard ½" or larger rubber-lined valve can be used the installation will be simplified.

The availability of liquid alum has eliminated one headache which we often encounter. Mills that dissolve sacked

alum are often bothered by a dirty solution that tends to plug small valves. This of course necessitates a strainer of some sort.

One of the first questions asked by potential buyers of pH equipment is, "What about the electrodes?" "How often do they need cleaning?" This depends entirely on the application and the mill. Electrodes in water need little attention. In mills where slime is prevalent, the electrodes will slime up like the rest of the equipment. I know of one Southern mill that has a bad silica condition in the water. Once a week they have to remove the scale with a cleaning powder. However I do not know of a paper mill installation where the time spent caring for electrodes has overbalanced the benefits derived from the installation.

In closing I would like to leave one thought. The pulp and paper industry and the affiliated companies are continually working to eliminate variables of all kinds. Every variable eliminated lessens the opportunity for errors, and shortens the time consumed in locating trouble—pH is just one more of those variables.

# Construction Begins This Summer On Celanese' New Sulfite Mill

Construction of the Pacific Northwest's newest pulp mill—Port Edward Cellulose Co.'s 250-ton high grade sulfite plant near Prince Rupert, B. C.—will be actually under way during the coming summer.

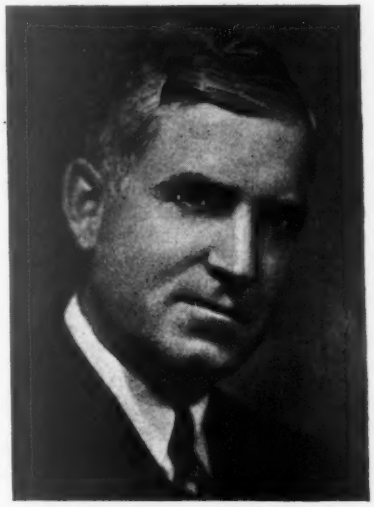
Plans for an early start on the major contracts were expected to be completed during the visit to the coast during April of G. F. Schneider, vice president of the company, who planned to go to the site of the new project at Watson Island, accompanied by a staff of engineers.

Port Edward Cellulose Co., an operating subsidiary of Celanese Corp. of America, New York, and the first of the parent corporation's pulp manufacturing enterprises, has purchased the entire 207-acre area of Watson Island, as was reported in PULP & PAPER Industry last month.

During the early stages of construction, if not later, extensive use will be made of the dock and warehouse facilities established there during the war for United States military forces.

When there was an active threat of invasion in the north and Alaska defenses were being developed. Prince Rupert became a major base for shipping supplies to the Alaska military and naval establishments, and some $10,000,000 was spent on construction and various facilities. A large part of this investment was made in the Port Edward section on Watson Island, eight miles southeast of Prince Rupert.

David G. Stenstrom, of Vancouver, B. C., former manager of Pacific Mills, Ocean Falls, B. C., is special consultant on the new mill for Port Edwards Cellulose Co.



**DAVID G. STENSTROM, Consultant in planning and construction of new high alpha pulp mill near Prince Rupert, B. C., for Port Edward Development Co., Ltd., subsidiary of Celanese Corp. of America. The first unit will make 250 tons daily of sulfite pulp.**




# New All-Time Record in Paper Output Seen by Boyce—IF There's Enough Pulp

Charles W. Boyce, formerly executive secretary of the American Paper & Pulp Association, more recently with the U. S. Department of Commerce, and generally rated by industry men as the government's No. 1 authority on pulp and paper, has made some interesting predictions for this year and the future.

"Paper production in 1947 can jump a million or more tons over the 1946 record (19,180,000 tons) if demand holds up," he declared.

"Except for some uncertainties as to market pulp, there is every likelihood that high paper production rates of the last quarter can be improved steadily during the year. But mills which depend on market pulp may lag behind, some of them quite a ways."

Mr. Boyce takes a rather gloomy outlook on market pulp for U. S. mills.

His cheerful tone regarding paper and "every likelihood" of even higher production rates, however, was preceded by a statement predicting a deflation of demand in 1947. However, demand might come down and still be above present production rates.

What he actually said was that:

1. Beginning in 1947, an abnormal demand for paper and paperboard will "come down out of the clouds." This demand has been due to "billions of restless dollars" spent in 1946 for consumer goods (paper is one of these and is used to package other such goods) because durable goods were not available.

2. Stabilization of prices may or may not come during 1947 ("there are evidences both positive and negative.....reactions can spell tonnage losses, idle machine hours and worry in 1947 just as they did in 1920, 1930, 1937 and even as late as 1942.")

Here are some other predictions and opinions expressed by Mr. Boyce in late February at a Paper Week meeting in New York:

1. Adequate supplies of market pulp at fair prices is the major problem before the American paper industry.

2. Canada can expand present pulp and paper facilities...it will make pulps and papers bringing highest return in terms of exchange and labor opportunity.

3. A decision to make pulp or newsprint in Alaska is difficult because of government controls and other unique operating conditions. Alaska timber will make as good sulfite pulp as that of Washington and British Columbia.

4. Species of wood needed for sulfite pulp in Continental U. S. is insufficient to support any added production in sulfite.

5. But, there is ample opportunity for carefully selected sites for sulfate pulp or defibrated and semi-chemical pulps in Southern pine and Pacific Coast Douglas fir regions. Also, possibly for small units in the Midwest and East.

6. When prices of pulp settle down, or prices of wood fail to settle down, some high cost pulp mills wil be forced to close.

7. Non-paper (rayon, plastics, etc.) pulp demand in U. S. will jump from 500,000 tons in 1946 to 750,000 in 1948 and 1,000,000 in 1950 (estimates based on extent to which producers of products believe they can cut into competitive fields). U. S. and Canadian pulp producers will shift to this market . . . or sell mills to non-paper pulp consumers.

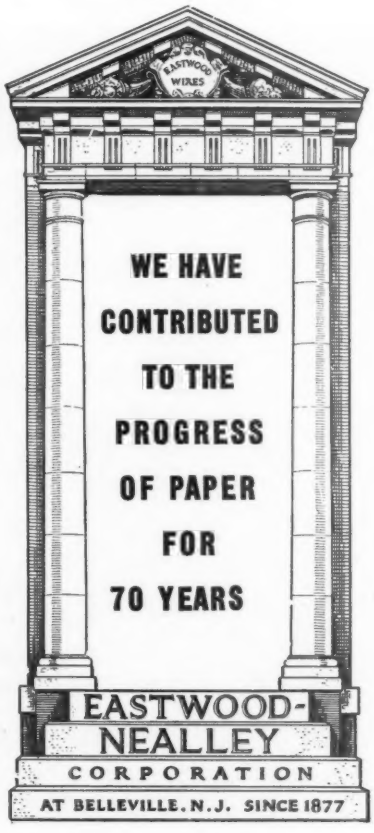
8. Europe can easily become a net pulp importer in a decade or two. England, Germany, France and Japan will need more wood pulp than ever before. In these countries the step to mass production of consumer goods is not great, but depends on packaging paper and paperboard.

9. European pulp production—outside Russia—probably will never again reach the 1937 record because of insufficient wood. Russia's wood resources may be severely taxed to meet Russia's needs.

10. Scandinavian countries may have an increase of 500,000 tons of pulp available for world markets in 1947 (over 1946) . . . but other markets threaten the U. S. competitive position . . . how much will come to the U. S. is a matter of competition or perhaps, commercial policy—"I would not hazard a guess."

11. Some unbleached sulfite in Canadian newsprint mills will be diverted to their own use, but there will be little net reduction in Canadian pulp available to U. S. mills in 1947, due to new production of market pulp . . . there seems a possibility that numerous British Columbia projects will jell.

12. "Much" of the 15-20% of sulfite pulp sold on the market by self-contained U. S. mills will be consumed by them in 1947. Likewise, "practically every U. S. company selling sulfate pulp has announced plans for expansion of paper production." There will be a big reduction in sulfate pulp sales.




## Thom Superintendent At Mexico City Plant

M. W. Thom, formerly superintendent at Sydney Roofing & Paper Co., Ltd., Victoria, B. C., left that city in late February for Mexico City where he has taken over duties as general superintendent of the paper and box division of United Shoe & Leather Co. His new address is: United Shoe & Leather Co., S. A., Colonia Del Nuevo Rastro, Apartado 1184, Mexico, D. F.

## Wood Pulp Movement Through Great Lakes

Three steamship lines expect to be operating about eight of the small ocean-lake type vessels from Scandinavian ports into the Great Lakes to Chicago and other ports, and they will include wood pulp in cargoes. After partially unloading at Montreal, they are able to continue into the Lakes carrying about 1,300 long tons. This should save costs to middle-West consumers of woodpulp.

## Dan Charles Passes; Mrs. Charles Carries On

Dan E. Charles, for many years with the Hearst organization as an inspector of paper and for the past 16 years a representative of a number of felt and wire companies in the United States and Canada, died in a hospital in Seattle after a long illness.

Mrs. Vernice M. Charles, his widow, is continuing in charge of his business. Hap Felt, who was doing most of the actual traveling in recent months for Mr. Charles, is continuing to do so.

Mr. Charles represented Knox Woolen Co., Wm. E. Hooper & Sons and Wisconsin Wire Works on the Pacific Coast, and George Christy Canada, Ltd., and Warwick Woolen Mills, Ltd., in Canada. Mrs. Charles and Mr. Felt will continue the office at 1331 Third Avenue.

## Represents New Mill For Newsprint in India

American Overseas Agency, Ltd., 20 Broad Street, New York City, is representing interests in India which intend to build a small newsprint mill, according to Charles H. Scott, president of the company.

Arrangements are being handled through American Overseas' subsidiary in India, The Printing House. Details are not available at this time, but Mr. Scott is gathering data on equipment and supplies.

## Texas Manager

Friends of A. F. Winfield, 56, an employee of the Crown Willamette sales organization for the past 16 years, were grieved to learn of his death last month. At time of his passing he was manager of the Harlingen, Texas, division. Leonard W. Hagstrom has been appointed to take his place.

## Changes in Crown Sales Organization

G. J. Ticoulat, San Francisco, sales manager of Crown Willamette Paper Co., announces that Ralph Dickey, with the company for the past 32 years, has been appointed sales manager for the new Northwest division, Crown Willamette sales organization, and will make headquarters in Portland, Ore.

The division includes Washington, Oregon, panhadle of Idaho, including Boise, and Western Montana.

Kenneth Ross, sales representative in Omaha, becomes representative for Washington. Frank Young from San Francisco, takes over Omaha. S. C. Carter becomes representative in San Francisco.

## DuPont Sales Manager

Charles T. Mentzer, Jr., 39, assistant sales manager of the fine chemicals division of the Du Pont Co.'s Organic Chemicals Department, has been named sales manager.

## Changes Name To Nopco Chemical Co.

At their annual meeting March 27, stockholders of National Oil Products Co. voted to change the company's name to Nopco Chemical Co. in order to identify the company more readily with the chemical industry.

Nopco has made a favorable beginning on 1947, Charles P. Gulick, president, said with increased earnings.

## President White Removed As Director

At a special shareholders' election of Brompton Pulp & Paper Co., Ltd., on March 24 in Montreal, President Arthur F. White was removed from directors. Four new names have been added to directorate since last annual report was issued: P. M. Fox, H. C. Flood, A. H. Campbell, and Aubrey Davis. In recent months the following directors have resigned: R. W. Steele, Dr. C. W. Colby and P. H. Scowen.

## Millers of Vancouver Now Have No. 4

A daughter, Martha, was born to George and Pearl Miller in Vancouver, Wash., Feb. 20. Martha's father is Resident Manager of Columbia River Paper Mills of Vancouver. She was welcomed by two brothers and a sister, David, 10; Scott, 3; and Mary, 5.

## Gerry Laegerloef Dies

Gerell "Gerry" Laegerloef died in Richland while on a trip from Kalamazoo, Mich., Mar. 13.

He represented Pagel, Horton in the Midwest and during the war was in the WPB pulp allocation office. He was forced to leave the strenuous war work but recovered from long illness to resume activities in Michigan.

His brother Eric is administrative assistant with the APPA.

## West Va. Man Dies

Joseph C. Reynolds, with West Virginia Pulp and Paper Co., for 33 years and former manager of its Chicago sales office, died Feb. 27 in Miami, Fla.

## School's Top Students Tour Washington Mills

James W. Scott and Henry L. Ostenson, top students of this year's fourth-year class of Crown Willamette Paper School, Camas, Wash., spent the first week of April visiting the Washington state mills on an expense-paid trip provided annually for the top students of the fourth year class. Mills visited include Weyerhaeuser Timber Co. pulp mills at Longview and Everett; Longview Fibre Co.; Crown Zellerbach Corp. mills at Port Angeles and Port Townsend; Everett Pulp & Paper Co., and Soundview Pulp Co. Both of these students are "spare hand" employes at the Camas plant of Crown Zellerbach Corp.

## Erik A. Thomee, Vice-Pres. of Bulkley-Dunton Pulp Co., Dies

Erik A. Thomee, vice president of the Bulkley-Dunton Pulp Co. died March 31 of a cerebral hemorrhage at Greenwich, Conn. He was 51.

Born in Helsingborg, Sweden, Mr. Thomee graduated from the Stockholm School of Economics and came to the U. S. in 1919. After having been with several Canadian and American mills, he joined Bulkley-Dunton in 1928 and in 1938 he was appointed vice president.

## Rust Builds Paper Bag Plant

The Rust Engineering Co., Pittsburgh, Pa., is building a modern bag plant at Mobile, Ala., for Arkell and Smiths of Canajoharie, N. Y.

Designed by Rust, the brick and steel building will be fire resistant and will include a manufacturing area and air-conditioned office space.


**Stebbins Can't put Silver Linings in Clouds--**

**But**



they do put acid-resistant linings in all kinds of pulp and paper mill vessels that give long time trouble free performance.

They have been doing it continuously and successfully for over 63 years.

This accounts for the fact that over 80% of all chemical pulp made on this continent is processed at some stage of its manufacture in equipment built or lined by Stebbins.

Call in Stebbins on your next lining or tank job.



Stebbins Engineering Corporation

TEXTILE TOWER SEATTLE 1, WASHINGTON

## Allis-Chalmers Strike Was Costly

An estimated $85,000,000 payroll and production loss was chalked up by the 328-day Allis-Chalmers strike, according to company estimates, including $20,000,000 lost in payrolls, and a $65,000,000 production loss.

Main issues were grievance procedure and maintenance of membership. The company had granted a 13½ cents an hour wage increase. Later the union demanded 25 cents plus a union shop.

The union courted government seizure of the struck plant, along with six other A-C factories, which later settled on company terms. It became evident that the government would not assume control and gradually more than 6,000 of the 11,000 had returned.

## St. Helens Has No Plan For Expansion

A 100% common stock dividend of St. Helens Pulp and Paper Co., St. Helens, Ore., was voted by stockholders at a February meeting of the group. Capital stock of the firm was doubled, from $2 100,000 to $4,200,000.

Max Oberdorfer, president and general manager, told PULP AND PAPER INDUSTRY the split was made to give the stock wider distribution because of the lower priced shares.

According to Mr. Oberdorfer, the company has no present plans for expansion, and he says, "of course the stock split will not produce additional capital".

Value of the company is considered in excess of $4,000,000.






## Cylinder Machine For California Plant

Construction of a building at Long Beach, Calif., was begun in March to house an 85" cylinder machine—all used equipment—for making heavy news liner, by Standard Gypsum Co.

This plant, although not similarly located, is to be operated in connection with a wall board plant at 1301 Water st., Long Beach, turning out board for Kaiser's fabricating housing projects in Southern California. The Machine, when in operation, is to have a daily capacity of 35 tons. Jim S. Tillman is superintendent of both establishments.

## Wants Equipment For Mill in China

A request for assistance and "practical advice" from North American pulp and paper machinery and equipment manufacturers has been received by PULP & PAPER Industry from the China Oversea Development Corp., 305 Bank of China Bldg., Hongkong (one of our many subscribers in the Trans-Pacific area).

D. R. Lan, the manager of the company, writes:

"May I ask for your assistance for I want to establish a pulp and paper manufacturing mill in China?" Other facts about China Oversea Development Corp.: Telephone, 23409; P. O. Box 698; telegraphic address, "Junkiudev."

## Spends Half Million For More Newsprint Capacity

Operating profit of $601,186 is reported for the year 1946 by Donohue Brothers, Ltd., operating newsprint and groundwood mills at Nairn's Falls, Clermont, Quebec. Net profit is reported at $231 366.

President G. T. Donohue says that a capital expenditure program involving an estimated $500,000 is expected to be completed next year. Estimated increase in newsprint capacity will amount to 12,000 tons a year.

## New Board Mill Will Import Pulp

A large paper mill and box factory under construction at Cali, Colombia, is expected in October to begin production of paperboard, corrugated boxes, solid fiber boxes, and folding cartons in sufficient quantities to supply the entire country.

The firm has a capital of approximately $1,500,000 (U. S. currency) and half-owned by a large American container company. It plans to employ about 150 workers and to import waste paper and wood pulp.

## Proudfoot Represents Central Paper Co.

Arthur Proudfoot has been named West Coast sales representative Central Paper Co., Muskegon, Mich, according to an announcement by E. W. Pitt, director of sales.

Mr. Proudfoot, with his wife assisting him as "secretary-manager" is established at Room 206, 909 South Atlantic Blvd., Los Angeles. He arrived on the coast last Nov. 1, at which time he was with Sherman Paper Products Co., and had been Chicago division sales manager for 17 years. His connection with Central Paper Co. began Mar. 1.

## First Coast Facial Machine Starts Up

The new facial tissue machine at Crown Zellerbach Corp., Camas, Wash., went into production Mar. 21 on a "slow bell" rate. During the first week of operation facial tissue was made, but subsequently 11½-pound flat tissue has been made pending installation of various supplementary pieces of equipment which have not yet been received from the manufacturers.

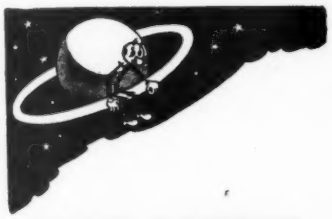
This is a Beloit 100-inch machine, the first facial tissue unit in the U. S. west of the Lake States. Facial has previously been made at Camas, but in restricted amounts, on No. 12 machine.

According to J. E. Hannv, resident manager, the new machine with a maximum capacity of 1500 lineal feet per minute is rated as a "honey" by the machine tender.

## Promotions Announced At Lonaview Fibre Co.

John Schuh has been recently promoted to become supervisor of engineering design and plans for Longview Fibre Co., Longview, Wash. Other promotions include Virgil Peters to mechanical superintendent; Dade Russell to designing engineer: and F. M. Peyton succeeds John Schuh as electrical and turbine supervisor.

Austin Russell was promoted early in March to the position of pulp mill tour foreman at Longview Fibre Co. He was formerly groundwood foreman and replaces J. G. Carson, who resigned. H. G. Anderson, former digester cook was promoted to the groundwood foreman position, and Walt Schultz has become the new digester cook.

**PUGET POWER'S COST OF LIVING IS 'WAY UP!**

**Here are some typical examples: Compared with a prewar year poles are up 40%, cross arms 50%, meters 20%, bare copper wire 50%, weatherproof wire 62%, distribution transformers 62%. In 1946 payroll was 65% above 1941 . . . and 1947 payroll will increase another million dollars, or about 15% over 1946. Yes, our cost of living is ballooning – but your cost per kilowatt hour for home and farm service keeps going down. It reached a new low of about 1.5 cents last year.**

**PUGET SOUND POWER & LIGHT CO.**

FRANK McLAUGHLIN, President


## Bartsch Is Chairman and President of Rayonier

Edward Bartsch, president of Rayonier Incorporated, manufacturers of wood cellulose pulp, has been elected chairman of the board. Mr. Bartsch will serve as president as well as chairman.

## Now Chief Engineer

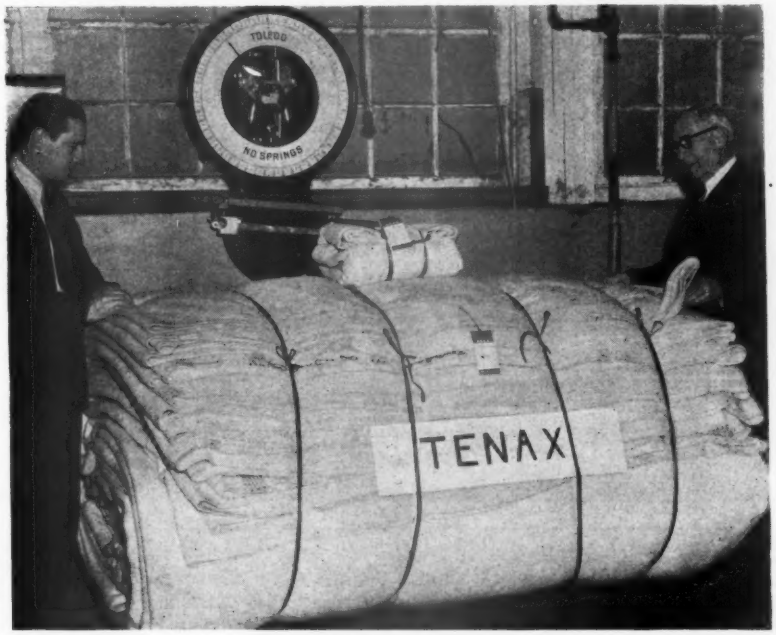
Appointment of Meder Johnson as chief engineer of Rayonier Incorporated is announced by Edward Bartsch, president. Mr. Johnson was resident engineer and later assistant resident manager at Port Angeles. He will move to Olympia to make headquarters.

## Swedish Prices

For April shipment only, Swedish bleached sulfite pulp was advanced to a quotable range of $150 to $157.50, according to a leading New York agent.

Swedish unbleached sulfite was raised to $120 to $130, unbleached kraft to $115 to $125, and bleached kraft to $155 on the single brand handled by the import agent.

A comparison between these prices and those recently released for Canadian pulp reveals Swedish pulp to be up between $30 and $37.50 on bleached sulfite pulp, up $5 to $15 on unbleached sulfite, up $20 to $25 on bleached kraft, and up $10 to $12.50 on unbleached kraft.




**According to Lockport Felt Co., of Newfane, N. Y., here on one set of scales is the largest felt ever made and the smallest. RAYMOND LEE, General Manager of the company, is at left; his father WILLIAM H. LEE, President, on right. The elder Mr. Lee is celebrating his 42nd anniversary with the company.**

**In his time, Lockport has grown from a plant with 35 employes to one giving employment to 190. It has six sets of 60-inch cards and 27 looms today as compared with one set of 48-inch cards and three looms in 1905.**

**This big felt is 240 ft. long, 18 ft., 2 in. wide and required wool from 230 sheep to provide its 1400 lbs.—sufficient wool to make 273 suits of clothes. Length of yarn in it is 335 miles.**


ASSISTANT MANAGER WANTED

for a large pulp and paper mill manufacturing newsprint and kraft papers. Candidate must have good experience in the technical part of the process or direct experience in paper machine operation. Reply giving complete details of experience, education and personal history with recent photograph to Box No. 41, Pulp and Paper Industry, 71 Columbia St., Seattle 4, Wash.


## Promotion at Union Bag

A. S. Farragut, shift foreman, has been promoted to assistant superintendent of the pulp mill at Union Bag & Paper Corp., Savannah, Ga., it is announced by Dr. C. E. Hartford, manager of the pulp and paper division.


FOR SALE: One complete Sulphite Digester Shell, size 15 ft. x 49 ft., capacity 15 tons. Full specifications upon application to Box 42, Pulp & Paper Industry, 71 Columbia St., Seattle 4, Wash.

**CONFIDENTAL**
**EMPLOYMENT SERVICE FOR PAPER AND PULP MILLS**

**WE INVITE CORRESPONDENCE WITH EMPLOYERS SEEKING EXECUTIVES AND EXECUTIVES SEEKING NEW POSITIONS.**

**CHARLES P. RAYMOND SERVICE, INC.**
**PAPER MILL DEPARTMENT**
**294 WASHINGTON STREET**
**BOSTON, MASS.**



the standard of comparison...

THE LARGEST KNOWN PONDEROSA PINE AND

Griffith MIGHTY TOUGH RUBBER COVERED ROLLS

GRIFFITH RUBBER MILLS
2439 N. W. 22nd Avenue • Portland 10, Oregon

PROGRESS REPORT

In a previous advertisement we said . . . "As 1947 begins, a $500,000 plant expansion program is under study."

We are now happy to announce that study has ended and work has begun:

1. In the United States—land has been acquired adjacent to the present Adhesive Products Company plant in Seattle and immediate construction is planned for additional laboratory and warehousing space.

2. In Canada—land has been acquired and contracts let for an adhesive and resins plant at New Westminster, B. C. This operation will, when completed, be similar in size to the Seattle plant.

A companion development of the plant expansion program is a change in company name. The Seattle business will be operated as the American-Marietta Company, Adhesive, Resin and Chemical Division. The British Columbia affiliate will be known as the American-Marietta Company of Canada, Ltd., Adhesive, Resin and Chemical Division.

Along with plant expansion and change of name is constant research work on new products. Expanded service, technical and engineering departments will make possible increased service to the plywood—and other industries.

This is our progress report. Your inquiries are invited on adhesives, synthetic resins and molding compounds.

A-M

AMERICAN-MARIETTA CO.
ADHESIVE, RESIN AND CHEMICAL DIVISION
3400 THIRTEENTH AVENUE, S. W., SEATTLE 4, WASHINGTON